UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

COMMUNICATIONS-COMPUTER SYSTEMS OPERATIONS
COMMUNICATIONS-COMPUTER SYSTEMS PROGRAMMING

AFSC 491X1/X2

AFPT 90-491-811

OCTOBER 1988

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
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PREFACE

This Occupational Survey Report (OSR) presents the results of a detailed Air Force occupational survey of two career ladders within the Communications-Computer career field. Specialties covered in this report include: Communications-Computer Systems Operations (AFSC 491X1), and Communications-Computer Systems Programming (AFSC 491X2). Authority for conducting occupational surveys is contained in AFR 35-2. Computer products used in this report are available for use by operations and training officials. Keywords: Job analysis,

The survey instrument for this project was developed by Mr Ted Wilcox, Occupational Analyst. TSgt Joseph Seitz provided computer support for the project. First Lieutenant William P. Knoll, Occupational Analyst, analyzed the data and wrote the final report. Administrative support was provided by Ms Linda Cole. This report has been reviewed by Mr Gerald R. Clow, Chief, Management Applications Branch, USAF Occupational Measurement Center, Randolph Air Force Base, Texas 78150-5000.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel (see distribution on page i). Additional copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph Air Force Base, Texas.

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Personnel development, Air Force personnel, Air Force training, Job satisfaction, Specialties. (SOW)

SUMMARY OF RESULTS

1. SURVEY COVERAGE: Survey results are based on responses from a representative sample of 3,452 AFSC 491XX personnel. This was broken down into 2,673 AFSC 491X1 personnel, and 669 AFSC 491X2 career ladder members.

2. SPECIALTY STRUCTURE: Analysis identified five jobs and four clusters containing a large number of jobs within them. Most of these jobs are distinct in the functions they perform, with each career ladder largely possessing very distinct duties. AFSC 491X1 career ladder personnel exhibited a large amount of diversity, while the 491X2 career ladder was relatively homogeneous.

3. CAREER LADDER PROGRESSION: In both of these Communications-Computer career ladders, 3-and 5-skill level personnel are performing essentially the same functions. Systems Operations 7-skill level personnel have a clear and definite shift toward supervisory functions. Seven-skill level Systems Programmers have a slight shift toward supervisory duties, although the vast majority of their time is still spent on technical duties. DAFSC 49199 personnel and 49100 CEM Code personnel have an entirely supervisory and managerial job. AFR 39-1 Specialty Descriptions are generally very descriptive of each career ladders' responsibilities.

4. TRAINING ANALYSIS: The STSs and POIs from both career ladders need to be reviewed. According to guidelines in ATCR 52-22, elements in both career ladders' STSs have 3-skill level proficiency coding above that which is indicated by survey data. In addition, both STSs have 3-skill level proficiency coding below that which survey data indicates. The POIs from both career ladders have unsupported objectives as well as tasks which should be reviewed for possible inclusion in the training courses.

5. JOB SATISFACTION: AFSC 491X1 personnel express positive job satisfaction indicators which are approximately equal to that of a comparative sample consisting of other Direct Support career ladders surveyed in 1987. AFSC 491X2 personnel generally had higher job interest, however their reenlistment intentions were lower than that of the comparative sample. In both career ladders, job satisfaction tended to increase with experience. Specialty jobs having the highest job satisfaction include: Computer Programmers, Technical School Personnel, and Systems Implementation Personnel. Those jobs having lower job satisfaction include: Message Distribution Center Personnel, and Switchboard Operators.

6. IMPLICATIONS: Both career ladders appear stable as all major functions identified in previous surveys were once again identified in this survey. The 491X2 career ladder was relatively homogeneous, with the 491X1 career ladder displaying more heterogeneity. The 491X1 and 491X2 Specialty Training Standards need to be reviewed by training personnel and functional managers. In addition, the POIs from both career ladders need to be reviewed by training personnel.

Based on such factors as 1) the large number of common tasks performed between the two clusters which aligned with different pre-merger AFSCs; 2) the stable and positive job satisfaction expressed by survey respondents; and 3) the results of the comparisons to previous surveys which identified all major functions performed by the pre-merger AFSCs, the formation of the 491X1 specialty seems to be supported by the results of this survey.

OCCUPATIONAL SURVEY REPORT
COMMUNICATIONS-COMPUTER SYSTEMS OPERATIONS AND PROGRAMMING
(AFSC 491X1/X2)

INTRODUCTION

This report summarizes the results of an occupational survey of two Air Force specialties contained within the Communications-Computer (AFSC 491XX) career field. The survey was requested by HQ USAF/SCBH to assess the impact of merging various AFSCs to form the 491X1/X2 specialties and to gather data for assessing training needs for these career ladders. This is the first occupational survey for these career ladders since the merger which created these Air Force specialties.

Background

The Communications-Computer Systems Operations career ladder (AFSC 491X1) was created in 1984 to incorporate the Computer Operations specialty (AFSC 511X0); the Telecommunications Operations specialty (AFSC 291X1); and the Automated Digital Switching specialty (AFSC 295X0) into one Air Force specialty. The merger of these specialties was necessary due to the increasing similarity of the communications and computer systems used by the three specialties. At the same time, the Communications-Computer Systems Programming career ladder (AFSC 491X2) was created by combining the Computer Programming specialty (AFSC 511X1) and the communications programmers (D-prefix personnel) from the Telecommunications Operations specialty (AFSC D291X0) and the Automated Digital Switching specialty (AFSC D295X0).

The Communications-Computer Systems Operations career ladder (AFSC 491X1) is responsible for preparing communications-computer equipment for operation, operating communications-computer equipment, performing authorized operator maintenance on communications-computer equipment, performing system product control, and serving as magnetic media librarians. The Communications-Computer Systems Programming career ladder (AFSC 491X2) is responsible for preparing block diagrams, flowcharts, and computer program coding; preparing, testing, and documenting computer routines, programs, and systems; scheduling and controlling communications-computer input and output; and analyzing and updating existing programs.

Initial training for AFSC 491X1 personnel is provided in a 45-day Category "A" course at Keesler AFB MS. This course, E3ABR49131, includes instruction on communications-computer system operation fundamentals, mini or large scale communications-computer operations, and introductory data processing. Upon completion of this course, graduates are awarded a 3-skill level and are

assigned to units worldwide. Initial training for the AFSC 491X2 career ladder is also provided at Keesler AFB. This 55-day, Category "A" course, E3ABR49132, introduces personnel to problem solving, structured programming, various high-order languages, system level operations, and project acceptance testing. Upon completion of this course, graduates are awarded a 3-skill level and assigned to units worldwide.

SURVEY METHODOLOGY

Survey Development

Data for this survey were collected using USAF Job Inventory AFPT 90-491-811, dated August 1987. After reviewing pertinent career ladder publications and tasks from previous survey instruments, the inventory developer prepared a preliminary task list. This task list was then refined and validated through personal interviews with subject-matter experts at bases representative of both career ladders to ensure thorough coverage of the various functions performed within the career ladders. In addition, subject-matter experts representing the major commands and the Air Staff reviewed and validated the survey instrument at a validation workshop held at the Occupational Measurement Center, Randolph AFB TX.

The final job inventory consisted of 609 tasks divided into 18 functional areas or duties. The inventory also contained a background section which included questions on equipment use, grade, Total Active Federal Military Service (TAFMS), and job title.

Survey Administration

From September 1987 through March 1988, survey control officers at Consolidated Base Personnel Offices worldwide distributed the inventory to a random sample of AFSC 491X1/X2 personnel. Participants were selected from a computer-generated mailing list provided by the Air Force Human Resources Laboratory.

To complete the survey, each incumbent first answered the background questions, then marked the tasks he or she performed. Finally, the incumbent rated each task performed according to the relative time spent performing that task. Ratings range from 1 (a very small amount of time spent) to 9 (a very large amount of time spent). As part of the computer analysis, all of an incumbent's ratings are combined and the total is assumed to represent 100 percent of the individual's time on the job. Each rating is then divided by this total and multiplied by 100 to give the relative percent time spent for each task. This procedure provides a basis for comparison of tasks in terms of percent members performing and average percent time spent.

Survey Sample

With over 15,000 members assigned to the two career ladders, a random stratified selection process was used to select career field members as survey participants and to ensure a proportional representation of major commands and military paygrades in the sample. A total of 4,517 incumbents were randomly selected to receive a job inventory booklet. Table 1 reflects the distribution by MAJCOM, as of September 1987, of the assigned population, as well as the distribution across the final survey sample. The 3,452 respondents in the final sample represent 76 percent of those receiving inventory booklets. Overall, the final sample consisted of 2,673 DAFSC 491X1 respondents and 669 DAFSC 491X2 respondents.

Task Factor Administration

In addition to collecting task performance data, the survey administration process involves collecting task factor ratings of task difficulty (TD) and training emphasis (TE). These ratings are collected from senior NCOs randomly selected to represent their career ladder, and are processed separately from task performance data.

Task difficulty (TD) refers to the length of time required for the average job incumbent to learn to do a task. To complete the TD booklet, each senior NCO rated inventory tasks with which they were familiar on a 9-point scale, ranging from extremely low relative difficulty (a rating of 1) to extremely high relative difficulty (a rating of 9). Separate ratings were computed for each career ladder. The interrater reliability of the TD data provided by 110 AFSC 491X1 NCOs was .97. The 55 AFSC 491X2 NCOs providing TD ratings also had an interrater reliability of .97. These interrater reliabilities indicate an excellent degree of agreement. Each set of TD ratings was adjusted to give a rating of 5.00 to a task of average difficulty, with a standard deviation of 1.00. The TD ratings provide a rank-ordered listing of the tasks in the inventory by degree of learning difficulty.

Training emphasis (TE) refers to the importance of structured training (through resident technical schools, field training detachments, formal OJT, etc.) of particular tasks for first-enlistment personnel. Individuals completing TE booklets rated tasks on a 10-point scale, ranging from a blank (no training emphasis) to 9 (extremely heavy training required). The TE ratings provide a rank-ordered listing of tasks from high to low training emphasis. Separate ratings were computed for each career ladder.

The interrater reliability for the 104 NCOs in AFSC 491X1 was .97. The average TE rating was 1.70, with a standard deviation of 1.43. Tasks rated above 3.13 are considered high in training emphasis for AFSC 491X1 first-enlistment personnel. The 51 AFSC 491X2 TE raters had an interrater reliability of .92, with an average TE rating of 1.88 and a standard deviation of 1.41. Tasks above 3.29 are considered high in training emphasis for AFSC 491X2 first-enlistment personnel. As was the case with the TD interrater reliabilities, both career ladders displayed excellent degrees of agreement.

TABLE 1

COMMAND DISTRIBUTION OF SURVEY SAMPLE

COMMAND	AFSC 491X1		AFSC 491X2	
	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AFCC	75	65	44	46
AFSC	2	2	5	7
AFSPACECOM	3	4	3	4
ATC	1	2	4	4
ESC	3	4	2	3
MAC	3	4	2	4
MPC	1	1	3	5
PACAF	-	-	-	-
SAC	1	2	3	4
TAC	2	4	5	7
USAFE	1	3	1	1
AF ELEMENTS	3	1	4	2
OTHER	5	6	24	13

	AFSC 491X1	AFSC 491X2
TOTAL ASSIGNED	11,921	3,129
TOTAL ELIGIBLE FOR SURVEY	3,577	779
TOTAL IN SAMPLE	2,673	669
PERCENT OF ASSIGNED IN SAMPLE	22%	21%
PERCENT OF ELIGIBLE SELECTED IN SAMPLE	75%	86%

TOTAL ASSIGNED (ALL AFSC 491XX PERSONNEL)	-	15,050
TOTAL AFSC 491XX PERSONNEL IN FINAL SAMPLE	-	3,452
PERCENT OF TOTAL AFSC 491XX PERSONNEL IN SAMPLE	-	23%

- Indicates less than 1 percent
* Stratified random sample (excludes those in PCS status, hospital, or less than 6 weeks on the job)

When used in conjunction with other information, such as percent members performing, TD and TE ratings can provide insight into training requirements. Such insight may help validate lengthening or shortening instruction supporting AFSC-needed knowledges or skills.

SPECIALTY JOBS
(Career Ladder Structure)

An important function of the USAF Occupational Analysis Program is examining a career ladder's structure. Based on incumbent responses to the survey, groups of incumbents spending similar amounts of time performing similar tasks are identified. Individuals performing many of the same tasks and spending similar amounts of time on those tasks group together to describe a job performed in the career ladder. When there are variations in the combinations of tasks and time spent on tasks by sample respondents, different jobs are identified. When there is a substantial degree of similarity between different jobs, they are grouped together and labeled as clusters. In this way, the basic structure of the career ladder, in terms of the jobs performed and their relationship to each other, is described. This analysis provides a foundation for evaluating other aspects of the career ladder, such as personnel classification, AFR 39-1 Specialty Descriptions, and training considerations.

Specialty Structure Overview

Responses from AFSC 491X2 personnel indicate a career ladder which is very homogeneous. The computerized AFSC 491X2 career ladder job description shows a number of tasks performed by over 50 percent of the survey respondents. These tasks appear below and account for approximately 17 percent of AFSC 491X2 personnel's job time.

Debug computer programs
Code computer programs in high level compiler languages
Compile or assemble programs
Desk check programs
Determine causes of abnormal program halts
Test computer programs
Work with users in resolving computer software malfunctions or problems
Review source code listings
Maintain source code listings
Design input or output formats

In addition, AFSC 491X2 personnel spend a large amount of their time, 41 percent, in one duty (Duty 0, Performing Software Development, Implementation, and Maintenance).

The 491X1 career ladder was much more heterogeneous than the 491X2 career ladder, as the jobs identified aligned functionally with one of the pre-merger AFSCs. Even so, AFSC 491X1 personnel performed many tasks which were common across all jobs. Examples of these tasks appear below.

Distribute messages or output products
Mount or dismount magnetic media
Escort visitors through facilities
Check operational status of equipment
Respond to system requests
Make entries on shift supervisor logs
Notify affected personnel, such as supervisors or remote users, of machine failures or downtime
Power up or power down communications-computer systems equipment
Authorize or deny access to restricted or controlled areas or classified materials

Based on variations in combinations of tasks performed, structure analysis identified four clusters and five separate jobs within the survey sample. The division of jobs performed within the AFSC 491X1/X2 career ladders is shown below. The number of personnel in each group (N) is also shown. Figure 1 shows the major functional areas identified in the job structure analysis.

491XX Specialty Jobs

I. COMPUTER OPERATIONS PERSONNEL (N=856)

- A. Computer Operators (N=567)
- B. Magnetic Media Librarians (N=75)
- C. Systems Security Personnel (N=12)
- D. Production Control Personnel (N=114)

II. COMMUNICATIONS OPERATIONS PERSONNEL (N=822)

- A. Telecommunications Operators (N=634)
- B. Switching Center Personnel (N=13)
- C. Mobility Personnel (N=98)
- D. Telecommunications Security Personnel (N=12)
- E. Traffic Analyses Personnel (N=44)

III. FUNCTIONAL AREA MANAGERS (N=636)

- A. Communications-Computer Supervisors (N=344)
- B. COMSEC Accountants (N=166)
- C. Unit Security Managers (N=32)
- D. Contracting and Budgeting Personnel (N=17)
- E. Switchboard Supervisors (N=14)
- F. Unit Training Managers (N=21)

JOBS IDENTIFIED IN 491X1/X2 CAREER LADDERS

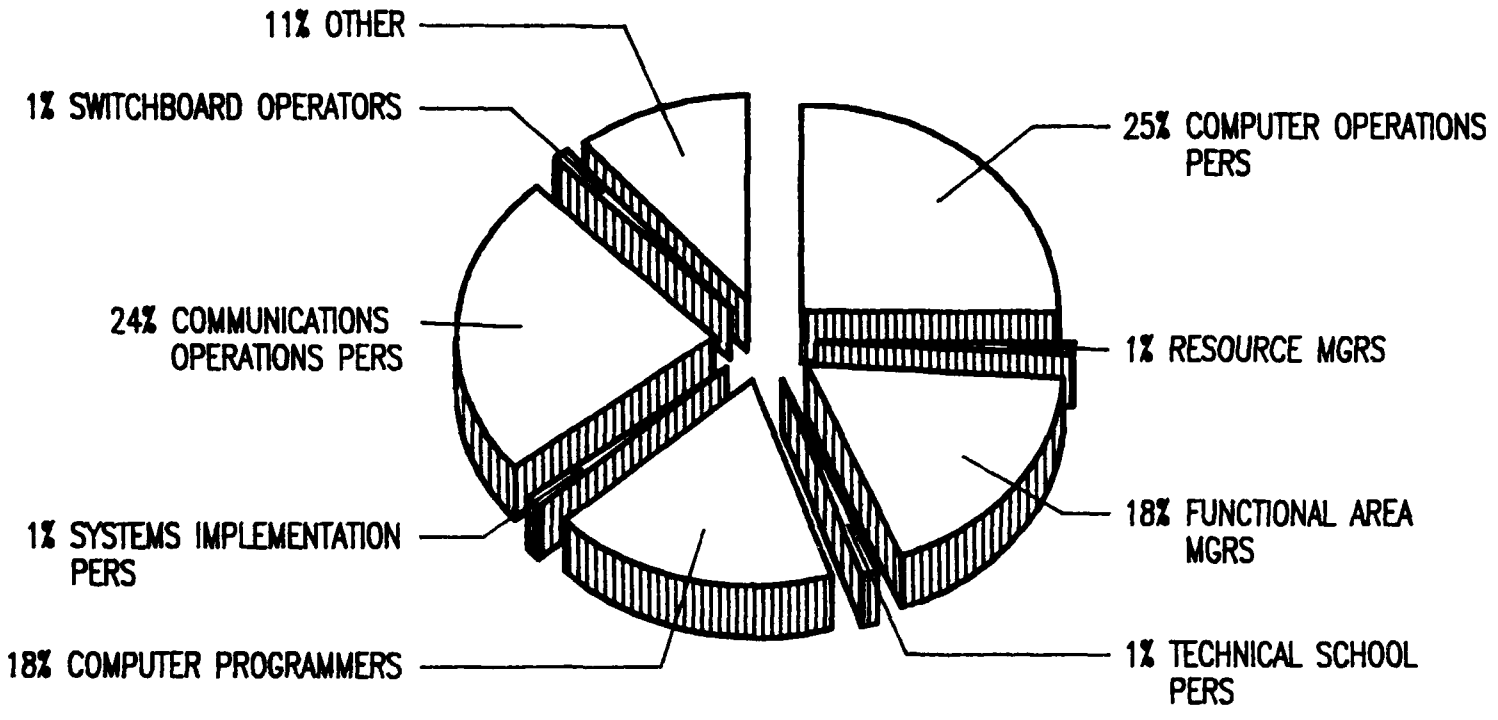

Figure 1

IV. COMPUTER PROGRAMMERS (N=635)

- A. Applications Programmers (N=303)
- B. Programmer Analysts (N=69)
- C. Data Base Analysts (N=11)
- D. Assembly Language Programmers (N=46)
- E. Security Programmers (N=10)
- F. Computer Operations Specialists (N=17)
- G. Systems Testing Personnel (N=15)
- H. Programming NCOICs (N=18)

V. MESSAGE DISTRIBUTION CENTER PERSONNEL (N=22)

VI. TECHNICAL SCHOOL PERSONNEL (T-PREFIX) (N=28)

VII. SYSTEMS IMPLEMENTATION PERSONNEL (N=17)

VIII. RESOURCE MANAGERS (N=38)

IX. SWITCHBOARD OPERATORS (N=33)

The respondents forming these clusters and jobs account for 89 percent of the survey sample. The remaining 11 percent did not group with any of the clusters or independent jobs because of the uniqueness of the job they perform or the manner in which they responded to the tasks listed in the job inventory.

Group Descriptions

The following paragraphs briefly describe the different clusters and jobs identified in the analysis of the 491XX career ladders. Table 2 provides selective background data on these groups. Time spent on duties for each group identified is displayed in Table 3. For a more detailed listing of representative tasks and a summary of background data on these jobs, see Appendix A.

I. COMPUTER OPERATIONS PERSONNEL CLUSTER (N=856). Comprised of five different jobs, the 856 airmen forming this cluster grouped together based on the time spent and performance of common computer operations tasks. The largest percentage of these respondents' job time (39 percent) is spent in Duty F, PERFORMING COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR FUNCTIONS, followed by 18 percent job time spent in Duty E, PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS FUNCTIONS. Composed almost entirely of AFSC 491X1 personnel, this cluster represents 32 percent of the 491X1 sample. A relatively junior group, 45 percent of these respondents are in their first enlistment, 60 percent are within 1-48 months Time In Career Field (TICF), and 77 percent hold either a 3- or 5-skill level. The average TICF is 54 months, with an average TAFMS of 72 months. Although assigned to all organizational levels, these incumbents tend to be assigned at the squadron or group level.

TABLE 2

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	COMPUTER OPS PERSONNEL	COMMUNICATION OPS PERSONNEL	FUNCTIONAL AREA MANAGERS
NUMBER IN GROUP	856	822	636
PERCENT OF SAMPLE	25	24	18
DAFSC:			
49131	14	13	2
49151	63	73	30
49171	22	13	54
49132	-	-	-
49152	-	-	2
49172	-	-	2
49199	-	-	8
CEM CODE 00	-	-	3
PREDOMINANT PAYGRADES	E-4	E-4	E-6
AVERAGE TICF (MOS)	54	53	126
AVERAGE TAFMS (MOS)	72	66	163
PERCENT IN FIRST ENLISTMENT	45	47	8
AVERAGE NUMBER OF TASKS PERFORMED	63	66	78

- Indicates less than 1 percent

TABLE 2 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	COMPUTER PROGRAMMERS	MESSAGE DISTRIBUTION CENTER PERSONNEL	TECHNICAL SCHOOL PERSONNEL	SYSTEMS IMPLEMENTATION PERSONNEL
NUMBER IN GROUP	635	22	28	17
PERCENT OF SAMPLE	18	-	1	-
49131	1	41	-	-
49151	5	50	39	12
49171	4	9	25	59
49132	8	-	-	-
49152	45	-	18	-
49172	34	-	11	24
49199	2	-	4	6
CEM CODE 00	-	-	4	-
PREDOMINANT PAYGRADES	E-5	E-4	E-5	E-7
AVERAGE TICF (MOS)	56	35	90	137
AVERAGE TAFMS (MOS)	107	51	126	178
PERCENT IN FIRST ENLISTMENT	25	65	-	-
AVERAGE NUMBER OF TASKS PERFORMED	85	20	30	72

- Indicates less than 1 percent

TABLE 2 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY

	RESOURCE MANAGERS	SWITCHBOARD OPERATORS
NUMBER IN GROUP	38	33
PERCENT OF SAMPLE	1	1
DAFSC:		
49131	5	9
49151	42	91
49171	39	-
49132	-	-
49152	5	-
49172	5	-
49199	3	-
CEM CODE 00	-	-
PREDOMINANT PAYGRADES	E-5	E-3/4
AVERAGE TICF (MOS)	79	29
AVERAGE TAFMS (MOS)	117	40
PERCENT IN FIRST ENLISTMENT	24	70
AVERAGE NUMBER OF TASKS PERFORMED	36	20

- Indicates less than 1 percent

TABLE 3

RELATIVE TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	COMPUTER OPS PERSONNEL	COMMUNICATIONS OPS PERSONNEL	FUNCTIONAL AREA MANAGERS
A ORGANIZING AND PLANNING	3	2	12
B DIRECTING AND IMPLEMENTING	3	2	10
C INSPECTING AND EVALUATING	2	2	12
D TRAINING	4	3	8
E PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS FUNCTIONS	18	14	9
F PERFORMING C-C SYSTEMS OPERATOR FUNCTIONS	39	19	5
G PERFORMING PRODUCTION CONTROL OR SYSTEMS MONITOR FUNCTIONS	6	1	1
H PERFORMING GENERAL COMMUNICATIONS FUNCTIONS	1	2	-
I PROCESSING MESSAGES	1	22	2
J PERFORMING TELECOMMUNICATIONS TRAFFIC ANALYSES FUNCTIONS	-	5	1
K PERFORMING MAGNETIC MEDIA LIBRARY FUNCTION	8	2	-
L PERFORMING C-C MOBILITY FUNCTIONS	-	2	1
M OPERATING NON-MOBILE TELEPHONE SWITCHBOARDS	-	2	1
N PERFORMING SOFTWARE PLANNING AND DESIGN	-	-	1
O PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE	3	-	1
P PERFORMING SOFTWARE TESTING, QUALITY ASSURANCE AND CONFIGURATION MGT FUNCTIONS	1	-	-
Q MAINTAINING SECURITY	9	21	28
R PERFORMING SUPPLY OR CONTRACTING FUNCTIONS	2	1	6

- Indicates less than 1 percent
* Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

RELATIVE TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	COMPUTER PROGRAMMERS	MESSAGE DIST CENTER PERSONNEL	TECHNICAL SCHOOL PERSONNEL	SYSTEMS IMPLEMENTATION PERSONNEL
A ORGANIZING AND PLANNING	2	1	3	8
B DIRECTING AND IMPLEMENTING	2	1	4	5
C INSPECTING AND EVALUATING	1	-	4	8
D TRAINING	3	1	58	3
E PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEM FUNCTIONS	8	29	5	11
F PERFORMING C-C SYSTEMS OPERATING FUNCTIONS	8	11	9	3
G PERFORMING PRODUCTION CONTROL OR SYSTEMS MONITORING FUNCTIONS	2	1	-	2
H PERFORMING GENERAL COMMUNICATIONS FUNCTIONS	-	-	-	1
I PROCESSING MESSAGES	-	27	1	-
J PERFORMING TELECOMMUNICATIONS TRAFFIC ANALYSES FUNCTIONS	-	4	-	-
K PERFORMING MAGNETIC MEDIA LIBRARY FUNCTION	1	1	-	-
L PERFORMING C-C MOBILITY FUNCTIONS	-	-	-	-
M OPERATING NON-MOBILE TELEPHONE SWITCHBOARDS	-	-	-	-
N PERFORMING SOFTWARE PLANNING AND DESIGN	14	-	1	26
O PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE	44	-	9	13
P PERFORMING SOFTWARE TESTING, QUALITY ASSURANCE AND CONFIGURATION MGT FUNCTIONS	7	-	-	10
Q MAINTAINING SECURITY	5	23	3	2
R PERFORMING SUPPLY OR CONTRACTING FUNCTIONS	2	-	1	7

- Indicates less than 1 percent
* Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

RELATIVE TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	RESOURCE MANAGERS	SWITCHBOARD OPERATORS
A ORGANIZING AND PLANNING	5	2
B DIRECTING AND IMPLEMENTING	4	3
C INSPECTING AND EVALUATING	3	1
D TRAINING	1	5
E PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS FUNCTIONS	9	7
F PERFORMING C-C SYSTEMS OPERATOR FUNCTIONS	4	2
G PERFORMING PRODUCTION CONTROL OR SYSTEMS MONITOR FUNCTIONS	-	1
H PERFORMING GENERAL COMMUNICATIONS FUNCTIONS	-	-
I PROCESSING MESSAGES	1	1
J PERFORMING TELECOMMUNICATIONS	1	-
K PERFORMING MAGNETIC MEDIA LIBRARY FUNCTION	-	-
L PERFORMING C-C MOBILITY FUNCTIONS	-	1
M OPERATING NON-MOBILE TELEPHONE SWITCHBOARDS	-	70
N PERFORMING SOFTWARE PLANNING AND DESIGN	1	-
O PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE	3	-
P PERFORMING SOFTWARE TESTING, QUALITY ASSURANCE AND CONFIGURATION MGT FUNCTIONS	-	-
Q MAINTAINING SECURITY	2	9
R PERFORMING SUPPLY OR CONTRACTING FUNCTIONS	68	1

- Indicates less than 1 percent
* Columns may not add to 100 percent due to rounding

In addition, 77 percent of these respondents reported working in a Data Processing Center. Tasks representative of Computer Operations Personnel are shown below.

Request system information via console
Notify affected personnel, such as supervisors or remote users, of machine failures or downtime
Mount or dismount magnetic media
Escort visitors through facilities
Initialize processing, such as batched job, on-line, or off-line
Isolate causes of machine stops or malfunctions

Of the five jobs identified within this cluster, the largest was the COMPUTER OPERATORS with 567 members. This job is the core group which makes up the cluster. Aside from a 5 percent increase in the time spent in Duty F, PERFORMING COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR FUNCTIONS, the basic background characteristics and tasks performed by the members of this job closely approximates the cluster. The next job, MAGNETIC MEDIA LIBRARIANS (N=75), is distinguished by responsibility for, and the large amount of time spent handling magnetic media. These incumbents were the most junior in the cluster, averaging only 44 months in the career field and 53 months TAFMS. SYSTEMS SECURITY PERSONNEL (N=12) was the next job identified in the cluster. These airmen were distinguished by an increased emphasis on security-related tasks, such as storing or safeguarding classified materials, destroying classified or sensitive material, and reporting security violations. Overall, personnel in this job spend over 36 percent of their time dealing with security issues. In the next job identified, the incumbents performed many common tasks dealing with production control and systems monitoring. PRODUCTION CONTROL PERSONNEL (N=124) perform a liaison role between the personnel requesting computer products and the computer operators. These personnel also ensure that computer requests are processed correctly and review output products for accuracy. Many of the personnel in this group reported job titles such as systems monitor, production control supervisors, and database managers. Overall, the personnel in this cluster aligned functionally with the technical operations performed by the former 511X0 AFSC.

II. COMMUNICATIONS OPERATIONS PERSONNEL (N=822). The airmen in this cluster grouped together based on the common performance of tasks dealing with message processing, communications-computer systems functions, and communications-computer systems operator functions. The personnel in this group were also somewhat junior, with 47 percent of the respondents in their first enlistment, 59 percent within 1-48 months TICF, and 86 percent holding a 3- or 5-skill level. Seventy-eight percent of these people reported working at the squadron or group level, while 70 percent reported working at a Base Communications Center or Telecommunications Center (BCC/TCC). Typical tasks performed by the members of this cluster include:

Prepare service messages
Follow up service messages
Annotate time of transmission or receipt on messages
Assign routing indicators
Witness destruction of classified materials
Escort visitors through facilities
Notify addressees or distribution centers of high precedence message receipt
Make entries on DD Forms 1503 (Message Correction Notices)

Five jobs were identified in this cluster. The largest group, TELECOMMUNICATIONS OPERATORS (N=634), was more concentrated at the BCCs/TCCs than the cluster, but otherwise mirrored the basic background characteristics and time spent across duties as the cluster. The second group, SWITCHING CENTER PERSONNEL (N=13), is responsible for handling large volumes of message traffic. These personnel were located at the various switching centers throughout the world, or at AF bases which handle large volumes of message traffic. In addition to their message processing tasks, these personnel also performed more general communications tasks, such as placing remote terminals or switching circuits into or out of service and making entries on intercept logs. Due to the large volume of message traffic they handle, these airmen also spend a substantial amount of time (30 percent) performing communications-computer systems operator functions. The third job identified in this cluster was MOBILITY PERSONNEL (N=98). These personnel spend a majority of their time performing mobility and security tasks, such as camouflaging mobile communications equipment, performing guard duty, erecting tactical air base contonement areas, and setting up and operating mobile communications equipment. These respondents were located primarily in Communications Combat Groups, with some respondents also located at an Advanced Sector Operations Center. The next group in this cluster, TELECOMMUNICATIONS SECURITY PERSONNEL (N=12), performed a very narrow job which emphasized maintenance of security along with their message processing functions. Common tasks of this job include: stamping messages with special handling, precedence, or classification; preparing service messages; and storing or safeguarding classified material. The final job identified in this cluster is TRAFFIC ANALYSES PERSONNEL (N=44). These personnel monitor incoming and outgoing message traffic and spend much of their time reviewing messages for proper handling and accuracy, reviewing traffic logs or files, and maintaining records of traffic volume. These personnel were the most experienced in the cluster, averaging 73 months TICF and 90 months TAFMS. Of the five jobs in this cluster, one job, SWITCHING CENTER PERSONNEL, aligned functionally with the former 295X0 AFSC, while the other four jobs aligned functionally with the former 291X0 AFSC.

III. FUNCTIONAL AREA MANAGERS (N=636). These are the supervisors of communications-computer operations and managers of the various functional areas primarily within the Communications-Computer Systems Operations career ladder. Eighty-six percent of this cluster are AFSC 491X1 personnel, while 67 percent of the cluster hold a 7-skill level or higher. These incumbents are relatively experienced, with an average of 126 months TICF and 163 months

TAFMS. Personnel in this cluster spend a total of 42 percent of their job time performing supervisory, managerial, and training duties, and spend another 28 percent of their job time maintaining security. Tasks representative of this cluster include:

Establish organizational policies, office instructions (OI) or standard operating procedures
Determine work priorities
Counsel personnel on personal or military-related matters
Prepare APR
Develop work methods or procedures
Store or safeguard classified material
Determine requirements for space, personnel, equipment or supplies

Six separate jobs were differentiated within this cluster. The largest job, COMMUNICATIONS-COMPUTER SUPERVISORS (N=344), spent their time supervising the personnel and operations within either a BCC/TCC, data processing center, or other communications-computer operations. Common job titles given by this group include NCOIC BCC/TCC, NCOIC Data Processing Center, or Chief/NCOIC Computer Operations. The next two jobs identified within this cluster deal primarily with security. COMSEC ACCOUNTANTS (N=166) are responsible for the handling of all cryptographic materials and equipment within their unit. UNIT SECURITY MANAGERS (N=32) spend 47 percent of their time dealing with security and 45 percent of their time performing supervisory, managerial, and training functions. These personnel are responsible for the security within their units, to include planning, evaluating, and implementing security programs, conducting security briefings or debriefings, performing physical and administrative security inspections, and designating classified materials for destruction. Personnel in the fourth job, CONTRACTING AND BUDGETING PERSONNEL (N=17), were those supervisors who also coordinated the procurement of equipment utilized in the computer systems area. Confirming contract terms, researching the status of purchase orders, and preparing procurement documents are common activities of the personnel in this job. UNIT TRAINING MANAGERS (N=21) was the next job identified in the cluster. These airmen are responsible for planning, implementing, conducting, and evaluating all on-the-job training within their unit. These respondents spend a total of 38 percent of their job time dealing specifically with training and another 30 percent of their job time performing supervisory and managerial functions. The last job identified in this cluster was the SWITCHBOARD OPERATOR SUPERVISORS (N=14). Members of this group spend a total of 50 percent of their job time on the supervision, management, and training of SWITCHBOARD OPERATORS (this job will be discussed later). An additional 27 percent of their job time was spent performing non-mobile telephone switchboard operations, such as compiling and maintaining telephone directories and placing calls between subscribers.

IV. COMPUTER PROGRAMMERS (N=635). Eighty-seven percent of the AFSC 491X2 personnel in the sample were in this cluster, so the following is essentially a description of the AFSC 491X2 career ladder. Cluster members spend an average of 44 percent of their job time in one Duty O, PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE. Another 14 percent of their time is spent in Duty N, SOFTWARE PLANNING AND DESIGN, while 7 percent of their time is spent performing software testing and quality assurance. Average TICF for this cluster is 56 months, with the average TAFMS being 107 months. The difference between the TAFMS and TICF indicates a substantial number of members of this cluster have spent time outside the career field before obtaining the 491X2 AFSC. Tasks representative of computer programmers are shown below and are similar to those tasks presented in the Specialty Structure Overview.

Debug computer programs
Compile or assemble programs
Determine causes of abnormal program halts
Desk check programs
Code computer programs in high level compiler languages
Test computer programs
Maintain source code listings
Review source code listings

A total of eight jobs were identified in this cluster. The largest job identified was the APPLICATIONS PROGRAMMERS (N=303), which accounted for 48 percent of the cluster. These airmen develop, implement, and maintain software, and perform many tasks common across the AFSC 491X2 career ladder. The next job identified was the PROGRAMMER ANALYSTS (N=69). These were senior personnel who identified themselves with titles such as NCOIC or chief of a software support or development branch. PROGRAMMER ANALYSTS coordinate and set specifications for the development of software. DATA BASE ANALYSTS (N=11) was the third job identified. These personnel write programs which interact with data bases and provide specifications for data base systems. ASSEMBLY LANGUAGE PROGRAMMERS (N=46) was the fourth job identified in this cluster. These personnel were located primarily at Tinker AFB OK, Offutt AFB NE, and Langley AFB VA, and write programs primarily in assembly language. SECURITY PROGRAMMERS (N=10) was the next job identified within this cluster. This small group of personnel had an increased emphasis on maintaining security and dealt with programming on classified projects. Six of the 10 members within this group reported programming on the Airborne Warning and Control System. COMPUTER OPERATIONS SPECIALISTS (N=17) was the next job identified. These respondents performed a very broad job consisting of very little programming tasks, and instead performed many computer operator functions. SYSTEMS TESTING PERSONNEL (N=15) was the seventh job identified. These personnel were responsible for preparing tests, performing tests, and analyzing the results of those tests on computer systems. The final job identified in the cluster was the PROGRAMMING NCOIC'S (N=18). These respondents were senior programmers who also held supervisory duties. Although NCOIC was a common term used in their job titles, these airmen still performed a very technical job.

V. MESSAGE DISTRIBUTION CENTER PERSONNEL (N=22). Members of this group work in the message distribution centers within the BCCs/TCCs and are responsible for the distribution and dissemination of all output products (primarily messages). These airmen spend a majority of their time performing communications-computer systems functions, message processing functions, and maintaining security. This is a relatively inexperienced group, with 41 percent of the members having less than one year in the career field, and 73 percent of these members having less than one year in their job. Representative tasks of these AFSC 491X1 incumbents are shown below:

Notify addressees or distribution centers of high precedence message receipt
Separate incoming messages for distribution or commercial refile
Stamp messages with special handling, precedence, or classification
Distribute messages or output products
Prepare unclassified media for mail, delivery, or distribution
Distribute classified material

VI. TECHNICAL SCHOOL PERSONNEL (N=28). Personnel in this job were primarily located at Keesler AFB MS, and represented the technical schools from both career ladders. Sixty-four percent of the members in this job held a 491X1 DAFSC and 29 percent held a 491X2 DAFSC, with the remaining members holding a 49199 or 49100 DAFSC. Although from different career ladders, these personnel are responsible for providing technical training to students and grouped together based on the performance of common training tasks. These airmen spend a total of 58 percent of their job time performing training tasks, such as:

Conduct resident course classroom training
Develop lesson plans
Score tests
Administer tests
Develop training aids
Write test questions
Counsel trainees on training programs

These personnel had a relatively high level of experience, with an average of 90 months TICF and 126 months TAFMS.

VII. SYSTEMS IMPLEMENTATION PERSONNEL (N=17). These 17 members are concerned with the implementation and installation of computer systems. The personnel in this job were the most experienced in the survey, averaging 136 months in the career field and 178 months TAFMS. Twelve of these airmen held 491X1 DAFSCs, four held 491X2 DAFSCs, and one held a 49199 DAFSC. Representative tasks performed in this job include:

Review communications plans
Review recommendations for proposed communications-computer systems equipment
Evaluate suggestions
Report implementation status of new communications-computer systems to using agencies
Develop inputs to communications-computer systems program plans
Review communications-computer systems requirement documentation (CSRD)

VIII. RESOURCE MANAGERS (N=38). Members of this group have a narrow job dealing with the acquisition and control of all supplies and equipment within their unit. These personnel spend approximately 58 percent of their time performing supply and equipment management tasks, such as inventorying supplies and equipment, inspecting supplies and equipment, and disposing of excess or unserviceable supplies and equipment. The members of this group were relatively experienced, with an average of 117 months TAFMS. Eighty-seven percent of these airmen hold a 491X1 DAFSC. Representative tasks of this job include:

Receipt for supplies or equipment
Place supplies or equipment in storage
Maintain equipment custodian accounts
Turn in excess or unserviceable parts, supplies, and equipment
Review communications-computer systems excess or availability bulletins

IX. SWITCHBOARD OPERATORS (N=33). These personnel performed a distinct and narrow job centering on the operation of telephone switchboards. The members of this job were the most junior of all the jobs identified in the survey, averaging just 29 months in the career field and 40 months TAFMS. Other than general security and communications-computer systems functions, these people performed no other mainstream communications-computer tasks, averaging approximately 70 percent of their time working telephone switchboards. All 33 members in this group hold a 491X1 DAFSC. Common tasks performed by these personnel include:

Accept and connect calls according to their precedence
Maintain status boards on location of commanders
Process telephone conference calls
Place calls between subscribers, other than special handling calls
Monitor high precedence or emergency calls

Comparison of Specialty Jobs

Four clusters and five jobs were identified within these two Communications-Computer career ladders. Two clusters of AFSC 491X1 personnel, the Computer Operations Personnel and the Communications Operations Personnel, aligned with pre-merger AFSCs. Although these two clusters were clearly differentiated, there were a large number of general communications-computer systems operation tasks and communications-computer operator tasks performed in common. This finding supports the merger and formation of the AFSC 491X1 specialty. The AFSC 491X2 career ladder was much more homogeneous than the 491X1s, as most of these airmen grouped into the Computer Programmer cluster. Within that cluster, Applications Programmers accounted for 48 percent of the cluster members.

Between the two career ladders, career ladder responsibilities were clearly distinct, as the majority of jobs were clearly dominated by members of one career ladder.

Comparison to Previous Survey

The results of this survey were compared to the results of previous OSRs containing the old Computer Operations specialty, Programming specialty, Telecommunications Operations specialty, and the Automatic Digital Switching specialty. Comparisons were difficult as the previous surveys were written system specific and a large number of jobs were previously identified based on the type of computer or communication system a group was working on, or by the language used to write programs. However, most of the major jobs identified in the previous surveys were again identified in this survey. Examples of jobs identified in the previous surveys but not in this survey include: AFSATCOM Operators, AUTODIN Operators, Digital Graphics Operators, Systems Analysis and Design Personnel, and COBOL Programmers. Examples of jobs identified in this survey but not in previous surveys include: Message Distribution Center Personnel, Assembly Language Programmers, Unit Training Managers, and Unit Security Managers. While these jobs may have existed when previous surveys were conducted, they either were not identified as separate jobs or were included in another job's responsibility.

ANALYSIS OF 491X1/X2 DAFSC GROUPS

In addition to analyzing the career ladder structure, examining skill levels is helpful in understanding a career ladder. The DAFSC analysis compares skill levels, highlighting differences in the tasks performed at the different levels. This information can be useful in evaluating how well various career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standards (STS), reflect what career ladder personnel are actually doing in the field.

In both career ladders, 3-skill level personnel were compared with 5-skill level personnel. Only minor differences separated these skill levels; therefore, these skill levels were combined for the purpose of analysis. Both the 491X1 and 491X2 career ladders converge at the 49199, Communications-Computer Systems Superintendent level, and progress to the Communications-Computer Systems Manager CEM Code 49100 level. These DAFSCs were also surveyed and will be discussed.

The distribution of skill-level groups across career ladder jobs is displayed in Table 4, while Table 5 offers another perspective by displaying the relative time spent on each duty across skill-level groups. A typical pattern of progression is present across the AFSC 491X1 career ladder, as personnel spend more of their relative time on duties involving supervisory and managerial tasks as they move upward through the 7-skill to the 99/00 DAFSC. Although much less marked, this pattern is also evident in the AFSC 491X2 career ladder.

Skill-Level Descriptions

DAFSC 49131/51. The 1,873 airmen in the 3- and 5-skill level group (70 percent of the AFSC 491X1 sample) perform an average of 61 tasks. Eighty-eight percent of their time is spent performing technical tasks, such as powering up or powering down communications-computer systems equipment, mounting and dismounting magnetic media, and checking the operational status of equipment. As shown in Table 5, a majority of their time is spent in Duties E, F, and Q. Seventy-four percent of this group is included in either the Computer Operations job or the Communications Operations job. Table 6 displays tasks representative of the airmen in this group. These representative tasks deal primarily with security, general communications-computer systems functions, and systems operator functions.

DAFSC 49171. This group consists of 800 individuals, accounting for 30 percent of the total AFSC 491X1 sample. They perform a broader job than 3- and 5-skill level personnel, averaging 70 tasks, as opposed to 61 tasks for 3- and 5-skill level personnel. Counseling personnel on personal or military-related problems, determining work priorities, and coordinating with subscribers or customers on matters such as operational or procedural problems are all common tasks for this group. Additional representative tasks for these personnel are shown in Table 7. As these tasks show, there is a definite trend toward managerial and supervisory tasks. Overall, 7-skill level personnel spend a total of 36 percent of their job time on managerial, supervisory, and training duties, as opposed to only 12 percent spent by the 3-/5-skill level airmen.

The largest percentage (46) of 7-skill level personnel were found in the Functional Area Managers job (see Table 4). This is consistent with their job description, which identified supervisory tasks as being their most commonly

TABLE 4

DISTRIBUTION OF AFSC 491XX SKILL LEVEL MEMBERS
ACROSS CAREER LADDER JOBS
(PERCENT RESPONDING)

JOB GROUPS	DAFSC 49131/51 (N=1,873)	DAFSC 49171 (N=800)	DAFSC 49132/52 (N=393)	DAFSC 49172 (N=276)
COMPUTER OPERATIONS PERSONNEL (N=856)	36	24	-	-
COMMUNICATIONS OPERATIONS PERSONNEL (N=822)	38	13	-	-
FUNCTIONAL AREA MANAGERS (N=636)	11	43	3	5
COMPUTER PROGRAMMERS (N=635)	2	3	86	79
MESSAGE DISTRIBUTION CENTER PERSONNEL (N=22)	1	-	-	-
TECHNICAL SCHOOL PERSONNEL (N=28)	1	1	1	1
SYSTEMS IMPLEMENTATION PERSONNEL (N=17)	-	1	-	1
RESOURCE MANAGERS (N=38)	1	2	1	1
SWITCHBOARD OPERATORS (N=33)	2	-	-	-
NOT GROUPED (N=364)	8	13	9	13

- Indicates less than 1 percent

TABLE 5

RELATIVE TIME SPENT ON DUTIES BY DAFSC 491XX SKILL LEVEL MEMBERS

DUTIES	DAFSC 49131/51 (N=1,873)	DAFSC 49171 (N=800)	DAFSC 49132/52 (N=393)	DAFSC 49172 (N=276)	DAFSC 49199/00 (N=110)
A ORGANIZING AND PLANNING	3	10	2	4	18
B DIRECTING AND IMPLEMENTING	3	9	2	4	17
C INSPECTING AND EVALUATING	2	9	1	3	18
D TRAINING	4	8	2	5	7
E PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS FUNCTIONS	16	12	8	8	9
F PERFORMING COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR FUNCTIONS	25	13	7	7	2
G PERFORMING PRODUCTION CONTROL OR SYSTEM MONITOR FUNCTIONS	3	2	2	2	1
H PERFORMING GENERAL COMMUNICATIONS FUNCTIONS	1	1	-	-	1
I PROCESSING MESSAGES	10	4	-	-	-
J PERFORMING TELECOMMUNICATIONS TRAFFIC ANALYSES FUNCTIONS	2	2	-	-	-
K PERFORMING MAGNETIC MEDIA LIBRARY FUNCTIONS					
L PERFORMING COMMUNICATIONS-COMPUTER MOBILITY FUNCTIONS	1	1	-	-	1
M OPERATING NON-MOBILE TELEPHONE SWITCHBOARDS	2	-	-	-	-
N PERFORMING SOFTWARE PLANNING AND DESIGN	1	2	13	15	5
O PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE	2	3	45	36	6
P PERFORMING SOFTWARE TESTING, QUALITY ASSURANCE, AND CONFIGURATION MGT FUNCTIONS	-	1	7	7	1
Q MAINTAINING SECURITY	17	17	6	5	11
R PERFORMING SUPPLY OR CONTRACTING FUNCTIONS	3	6	3	3	4

- Indicates less than 1 percent
* Columns may not add up to 100 percent due to rounding

TABLE 6

REPRESENTATIVE TASKS OF DAFSC 49131/51 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=1,873)
Q538	ESCORT VISITORS THROUGH FACILITIES	68
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	62
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	61
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	59
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	56
E90	CHECK OPERATIONAL STATUS OF EQUIPMENT	55
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	55
E110	MAKE ENTIRES ON SHIFT SUPERVISOR LOGS	53
F188	RESPOND TO SYSTEM REQUESTS	51
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	50
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	50
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	49
F174	PERFORM OPERATOR MAINTENANCE ON COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	48
E115	PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY OR DISTRIBUTION	47
F143	ENTER DATA VIA CONSOLE	45
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	45
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	44
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	43
I240	PREPARE SERVICE MESSAGES	43
I229	FOLLOW UP SERVICE MESSAGES	42

TABLE 7

REPRESENTATIVE TASKS OF DAFSC 49171 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=800)
Q538	ESCORT VISITORS THROUGH FACILITIES	68
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	68
C56	PREPARE APR	66
A4	DETERMINE WORK PRIORITIES	65
B36	SUPERVISE 5-LEVEL COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR PERSONNEL (AFSC 49151)	57
A6	DEVELOP WORK METHODS OR PROCEDURES	56
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	56
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	53
E90	CHECK OPERATIONAL STATUS OF EQUIPMENT	52
D64	CONDUCT OJT	52
A20	SCHEDULE LEAVES OR PASSES	51
C59	WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	50
E93	COORDINATE WITH SUBSCRIBERS OR CUSTOMERS ON MATTERS SUCH AS OPERATIONAL OR PROCEDURAL PROBLEMS	48
D68	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	48
C529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	47
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	47
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	46
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	46
D81	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	46
Q562	REPORT SECURITY VIOLATIONS	46

performed tasks. A large percentage (24) of 7-skill level airmen also performed the Computer Operations job, while the Communications Operations job accounted for 13 percent of the 7-skill level personnel. Tasks showing the differences between 3- and 5-skill level personnel and 7-skill level personnel are shown in Table 8.

DAFSC 49132/52. The 393 members in this group comprised 59 percent of the AFSC 491X2 sample. Ninety-three percent of their time is spent performing technical tasks, such as debugging computer programs, desk checking programs, and coding computer programs in high-level compiler languages. Forty-five percent of their job time is spent in Duty 0, PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE. Eighty-six percent of this group is included in the Computer Programmer cluster. This emphasizes the homogeneous nature of the career ladder. Representative tasks performed by these 3- and 5-skill level personnel are shown in Table 9.

DAFSC 49172. The jobs of the 276 7-skill level personnel are very similar to that performed by the 3- and 5-skill level personnel. The difference occurs in the scope of the job, as 7-skill level personnel have an increase in the supervisory and higher level technical tasks they perform. Seven-skill level personnel perform 85 tasks, compared to only 59 tasks performed by 3- and 5-skill level personnel. Overall, 7-skill level personnel still perform a very technical job, spending only 16 percent of their job time performing tasks within the supervisory, managerial, and training duties. This relatively low amount of time spent in supervisory type activities is further emphasized by the fact that only 5 percent of the 7-skill level personnel are found in the Functional Area Managers cluster (see Table 4). Similar to 3- and 5-skill level personnel, 79 percent of these personnel are included in the Computer Programmer cluster. Representative tasks performed by 49172 airmen are found in Table 10. Tasks which differentiate between 3- and 5-skill level personnel and 7-skill level personnel are found in Table 11.

DAFSC 49199 and CEM Code 49100. One hundred and ten DAFSC 49199/00 personnel responded to this survey. This amounts to 3 percent of the total survey sample. These personnel spend a substantial amount of time performing supervisory and managerial tasks such as interpreting policies and directives, determining requirements for personnel and equipment, and establishing performance standards for subordinates. This group's supervisory orientation is evident by the large amount of job time (60 percent) spent in the supervisory, managerial, and training duties, and is reflected again by the representative tasks for this group displayed in Table 12. While these senior-level personnel may perform a few higher level technical tasks, the focus of their job is clearly supervisory in nature.

As discussed in the skill-level descriptions, both career ladders display a relatively technical orientation. Career ladder progression is apparent in both career ladders, as 7-skill level personnel in both career ladders show increases in the supervisory and managerial duties performed. The progression is less evident in the AFSC 491X2 career ladder, however, as DAFSC 49172 airmen still perform a very technical job.

TABLE 8

EXAMPLES OF TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 49131/51 PERSONNEL AND DAFSC 49171 PERSONNEL (PERCENT MEMBERS PERFORMING)

JOB GROUPS		DAFSC 49131/51 (N=1,873)	DAFSC 49171 (N=800)	DIFFERENCE
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	56	32	+24
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	43	21	+22
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	59	37	+22
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	61	40	+21
I229	FOLLOW UP SERVICE MESSAGES	42	21	+21
F190	SET OR RESET COMPUTER TIME CLOCKS	49	28	+21
I240	PREPARE SERVICE MESSAGES	43	22	+21
E111	NOTIFY ADDRESSEES OR DISTRIBUTION CENTERS OF HIGH PRECEDENCE MESSAGE RECEIPT	37	17	+20
C56	PREPARE APR	23	66	-43
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	25	68	-43
A20	SCHEDULE LEAVES OR PASSES	11	51	-40
C59	WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	11	50	-39
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	22	56	-34
A18	PREPARE UNIT EMERGENCY PLANS	20	53	-33
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	14	47	-33
C46	EVALUATE INSPECTION REPORTS OR PROCEDURES	8	40	-32
A6	DEVELOP WORK METHODS OR PROCEDURES	25	56	-31
A16	PLAN WORK ASSIGNMENTS	14	45	-31

TABLE 9

REPRESENTATIVE TASKS OF DAFSC 49132/52 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=393)
0400	DEBUG COMPUTER PROGRAMS	82
0398	COMPILE OR ASSEMBLE PROGRAMS	79
0404	DESK CHECK PROGRAMS	77
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	75
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	74
P523	TEST COMPUTER PROGRAMS	69
0435	MAINTAIN SOURCE CODE LISTINGS	58
0473	REVIEW SOURCE CODE LISTINGS	58
0397	CODE JOB CONTROL RUN STREAMS IN JOB CONTROL LANGUAGES	52
N333	DESIGN INPUT OR OUTPUT FORMATS	50
0484	WRITE JOB CONTROL RUN STREAMS	47
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	47
0399	COORDINATE WITH USERS ON NEW SYSTEM RELEASES	45
0402	DESIGN ERROR HANDLING ROUTINES	44
0483	WRITE FUNCTIONAL APPLICATIONS PROGRAMS	42
N326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	41
0467	REVIEW PROGRAM SPECIFICATIONS	40
0465	REVIEW INPUT OR OUTPUT FORMATS	40
0388	ANALYZE PROGRAM DUMPS	38

TABLE 10

REPRESENTATIVE TASKS OF DAFSC 49172 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=276)
0400	DEBUG COMPUTER PROGRAMS	78
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	73
0398	COMPILE OR ASSEMBLE PROGRAMS	71
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	68
0404	DESK CHECK PROGRAMS	66
P523	TEST COMPUTER PROGRAMS	65
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	59
N330	DESIGN DATA BASE SPECIFICATIONS	54
0473	REVIEW SOURCE CODE LISTINGS	53
0399	COORDINATE WITH USERS ON NEW SYSTEM RELEASES	53
N326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	50
D64	CONDUCT OJT	48
B40	WRITE CORRESPONDENCE	47
N324	ANALYZE DATA BASE REQUIREMENTS	45
0402	DESIGN ERROR HANDLING ROUTINES	44
0397	CODE JOB CONTROL RUN STREAMS IN JOB CONTROL LANGUAGES	44
0483	WRITE FUNCTIONAL APPLICATIONS PROGRAMS	39
E93	COORDINATE WITH SUBSCRIBERS OR CUSTOMERS ON MATTERS SUCH AS OPERATIONAL OR PROCEDURAL PROBLEMS	39
0484	WRITE JOB CONTROL RUN STREAMS	38

TABLE 11

EXAMPLES OF TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 49132/52 PERSONNEL AND DAFSC 49172 PERSONNEL (PERCENT MEMBERS PERFORMING)

JOB GROUPS		DAFSC 49132/52 (N=393)	DAFSC 49172 (N=276)	DIFFERENCE
0404	DESK CHECK PROGRAMS	77	66	+11
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	15	46	-31
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	9	38	-29
A4	DETERMINE WORK PRIORITIES	20	49	-29
D64	CONDUCT OJT	24	48	-24
A20	SCHEDULE LEAVES OR PASSES	7	31	-24
C41	ANALYZE WORKLOAD REQUIREMENTS	9	31	-22
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	9	30	-21
D78	EVALUATE OJT TRAINEES	9	30	-21
N340	DETERMINE COMMUNICATIONS-COMPUTER SYSTEMS INPUT REQUIREMENTS	19	36	-17
0410	DEVELOP DATA BASE RECOVERY PROCEDURES	14	29	-15
N353	DEVELOP SOFTWARE IMPLEMENTATION OR CONVERSION PLANS	16	31	-15
N342	DETERMINE COMMUNICATIONS-COMPUTER SYSTEMS OUTPUT REQUIREMENTS	20	34	-14
P494	DETERMINE IMPACT OF OPERATING SYSTEMS ERRORS	8	22	-14

TABLE 12

REPRESENTATIVE TASKS OF DAFSC 49199/49100 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=110)
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	81
C56	PREPARE APR	74
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	73
B40	WRITE CORRESPONDENCE	70
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	70
C59	WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	69
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT OR SUPPLIES	65
A20	SCHEDULE LEAVES OR PASSES	65
C60	WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS	64
A4	DETERMINE WORK PRIORITIES	63
B31	INITIATE PERSONNEL ACTION REQUESTS	62
A1	ASSIGN PERSONNEL TO DUTY POSITIONS	62
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	61
A6	DEVELOP WORK METHODS OR PROCEDURES	61
A2	ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL	61
C45	EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION OR RECLASSIFICATION	60
A11	PLAN BRIEFINGS	58
A9	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	58
A17	PREPARE JOB DESCRIPTIONS	58
B38	SUPERVISE 7-LEVEL COMMUNICATIONS-COMPUTER SYSTEMS OPERATION PERSONNEL (AFSC 49171)	56

AFR 39-1 SPECIALTY DESCRIPTIONS FOR AFSCs 491X1/X2

Occupational survey data are also used to examine classification issues. By comparing those jobs performed in a career ladder to the specialty descriptions, judgments can be made about the descriptions' completeness and accuracy.

AFR 39-1 Specialty Descriptions are intended to give a very broad description of the responsibilities held by the various skill levels within a career ladder. Two job descriptions were applicable to AFSC 491X1 (one description for DAFSCs 49111, 49131, and 49151 and one description for DAFSC 49171), while two job descriptions were also applicable to AFSC 491X2 (one description for DAFSCs 49112, 49132, and 49152 and one description for DAFSC 49172). There was also one job description for DAFSC 49199 and CEM Code 49100 skill levels. All job descriptions were dated 1 February 1988.

The tasks and duties contained in the job descriptions were well supported by the results of this occupational survey. The AFSC 491X1 job descriptions made no reference to the mobility functions performed by a small percentage of personnel in the career ladder; however, this was corrected with the proposed addition of this function at a Utilization and Training Workshop (U&TW) held at Keesler AFB MS in May 1988. With this exception, the tasks and duties contained in all the job descriptions were well supported by the results of this survey. This fact was validated by members of the previously mentioned U&TW.

Although the job descriptions accurately reflected the duties and tasks being accomplished at the various skill levels for both career ladders, members at the previously mentioned U&TW made several proposed changes to each job description centering on updating career ladder terminology. In addition, all references in the AFSC 491X1 job descriptions relating to pre-merger AFSC terminology were replaced with current AFSC 491X1 terminology. In no case was the content of the job descriptions affected.

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

A comparison was made of the various tasks performed and background data for DAFSC 49151 and 49152 respondents assigned within the CONUS versus those assigned to overseas locations.

DAFSC 49151. Very few differences could be detected in the overall mission of DAFSC 49151 personnel in regard to their CONUS/OS location. Overseas personnel did tend to have higher percent members performing tasks dealing with message processing, such as retrieving messages manually, preparing service messages, and assigning routing indicators. Otherwise, CONUS and overseas personnel perform the same job. Table 13 displays the slightly increased message processing orientation of overseas personnel.

TABLE 13

TASKS WHICH DIFFERENTIATE BETWEEN DAFSC 49151
CONUS AND OVERSEAS GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS		OVERSEAS (N=514)	CONUS (N=1,014)	DIFFERENCE
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	50	35	+15
I229	FOLLOW UP SERVICE MESSAGES	53	38	+15
I240	PREPARE SERVICE MESSAGES	53	39	+14
E111	NOTIFY ADDRESSEES OR DISTRIBUTION CENTERS OF HIGH PRECEDENCE MESSAGE RECEIPT	46	33	+13
I245	RETRIEVE MESSAGES MANUALLY	29	16	+13
I233	MAINTAIN SERVICE MESSAGE LOGS OR FILES	49	36	+13
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	52	40	+12
E125	TEST PERFORMANCE OF CRYPTOGRAPHIC EQUIPMENT IN LOCAL POSITION	31	19	+12
I246	SEPARATE INCOMING MESSAGES FOR DISTRIBUTION OR COMMERCIAL REFILE	38	27	+11
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	50	40	+10
I224	ASSIGN ROUTING INDICATORS	46	36	+10

DAFSC 49152. As expected, the jobs performed by CONUS and overseas personnel were very similar; however, some minor differences were noted. CONUS personnel had higher percent members performing on tasks dealing with software development, implementation, and maintenance. Examples of such tasks include: coding computer programs in high-level compiler languages, writing utility programs, writing functional applications programs, and writing database programs. Overseas personnel placed more emphasis on security-related tasks such as storing or safeguarding classified material, reporting security violations, and performing courier functions. Table 14 shows those tasks which best differentiate between between DAFSC 49152 CONUS and overseas groups.

AFSC 491X1/X2 TRAINING ANALYSIS

Information gathered from occupational survey data is also used to assist in the development or evaluation of formal training programs or training documents such as the Specialty Training Standard (STS) and Plan of Instruction (POI). A particularly important factor which may be used for this purpose is the percentage of an appropriate group, such as first-enlistment (1-48 months TAFMS) personnel, performing tasks. In addition, the secondary task factors of training emphasis or task difficulty ratings (as explained in the Task Factor Administration section) provide useful information.

Technical school personnel from both career ladders have matched technical job inventory tasks to appropriate STS or POI sections to facilitate use of occupational survey data to evaluate the relevance and completeness of these documents. Computer listings which display the STS or POI with matched tasks and survey data are used in the analysis to show which sections of the STS or POI are most relevant to the career ladder. They may also be used to show which tasks not matched to these documents may need to be included due to the extent to which they are performed in the career ladder and their importance to training. To aid in any further detailed review of training documents, these computer displays have been forwarded to the technical school. In addition to a summary of that information, this section contains an analysis of the first-enlistment personnel. Figure 2 shows the distribution of AFSC 491X1 first-enlistment personnel across the jobs discussed in the SPECIALTY JOBS section of this report. Figure 3 shows the distribution of AFSC 491X2 first-enlistment personnel across the jobs in the Computer Programmer cluster also discussed in the SPECIALTY JOBS section.

Training Emphasis and Task Difficulty Data

The objective of collecting TE and TD ratings is to identify tasks in terms of importance for first-term training and in terms of difficulty. These lists of inventory tasks are included in both the Analysis and Training Extracts, with TE and TD ratings accompanying each inventory task displayed in the Training Extract. (For a more detailed explanation of both types of ratings, see Task Factor Administration in the SURVEY METHODOLOGY section.) Tasks performed by moderate to high percentages of personnel may warrant

TABLE 14

TASKS WHICH DIFFERENTIATE BETWEEN DAFSC 49152
CONUS AND OVERSEAS GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS		OVERSEAS (N=56)	CONUS (N=280)	DIFFERENCE
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	77	54	+23
P523	TEST COMPUTER PROGRAMS	74	55	+19
0488	WRITE UTILITY PROGRAMS	35	18	+17
P509	PREPARE PROGRAM TEST SPECIFICATIONS OR INSTRUCTIONS	23	7	+16
0398	COMPILE OR ASSEMBLE PROGRAMS	81	66	+15
0479	WRITE DATA BASE PROGRAMS	26	13	+13
0417	DEVELOP SOFTWARE PROTOTYPES	18	5	+13
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	18	45	-27
Q548	MARK OR STAMP SENSITIVE UNCLASSIFIED OR CLASSIFIED INFORMATION, OTHER THAN MESSAGES	19	45	-26
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	19	41	-22
Q562	REPORT SECURITY VIOLATIONS	19	38	-19
Q538	ESCORT VISITORS THROUGH FACILITIES	28	45	-17
Q567	SIGN RECEIPTS FOR CLASSIFIED MATERIALS	11	27	-16
Q551	PERFORM COURIER FUNCTIONS	6	21	-15

DISTRIBUTION OF 491X1 FIRST ENLISTMENT PERSONNEL ACROSS JOBS

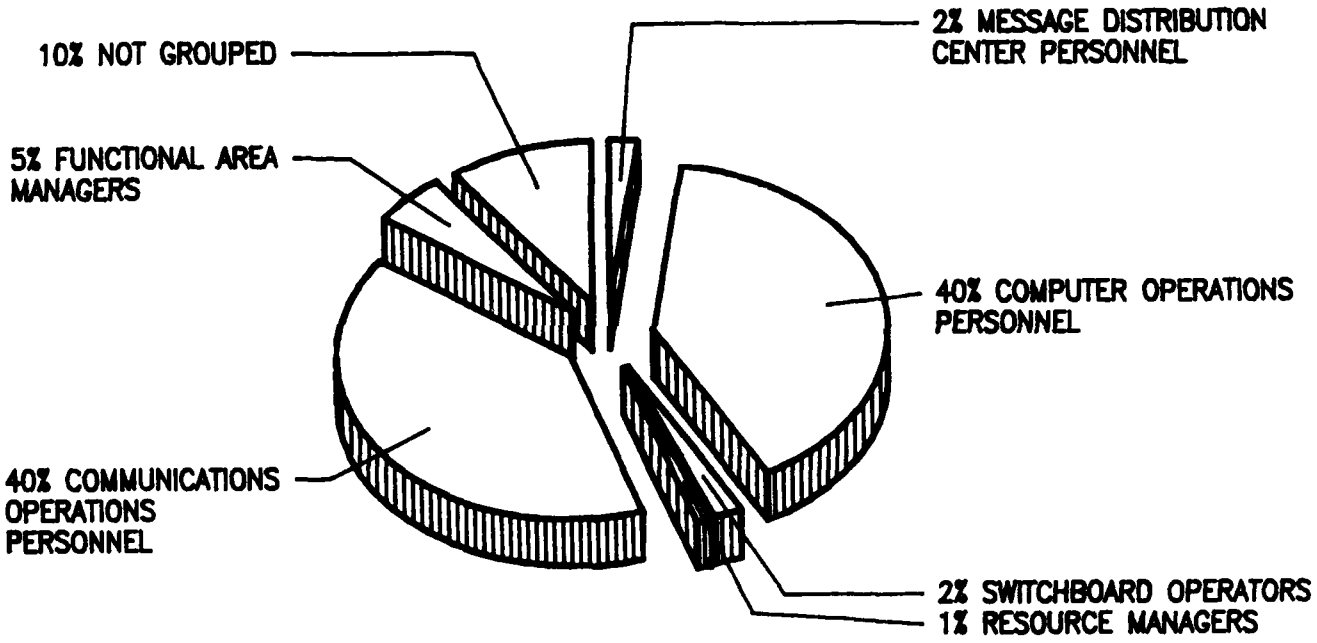

FIGURE 2

DISTRIBUTION OF 491X2 FIRST ENLISTMENT PERSONNEL ACROSS COMPUTER PROGRAMMER CLUSTER JOBS

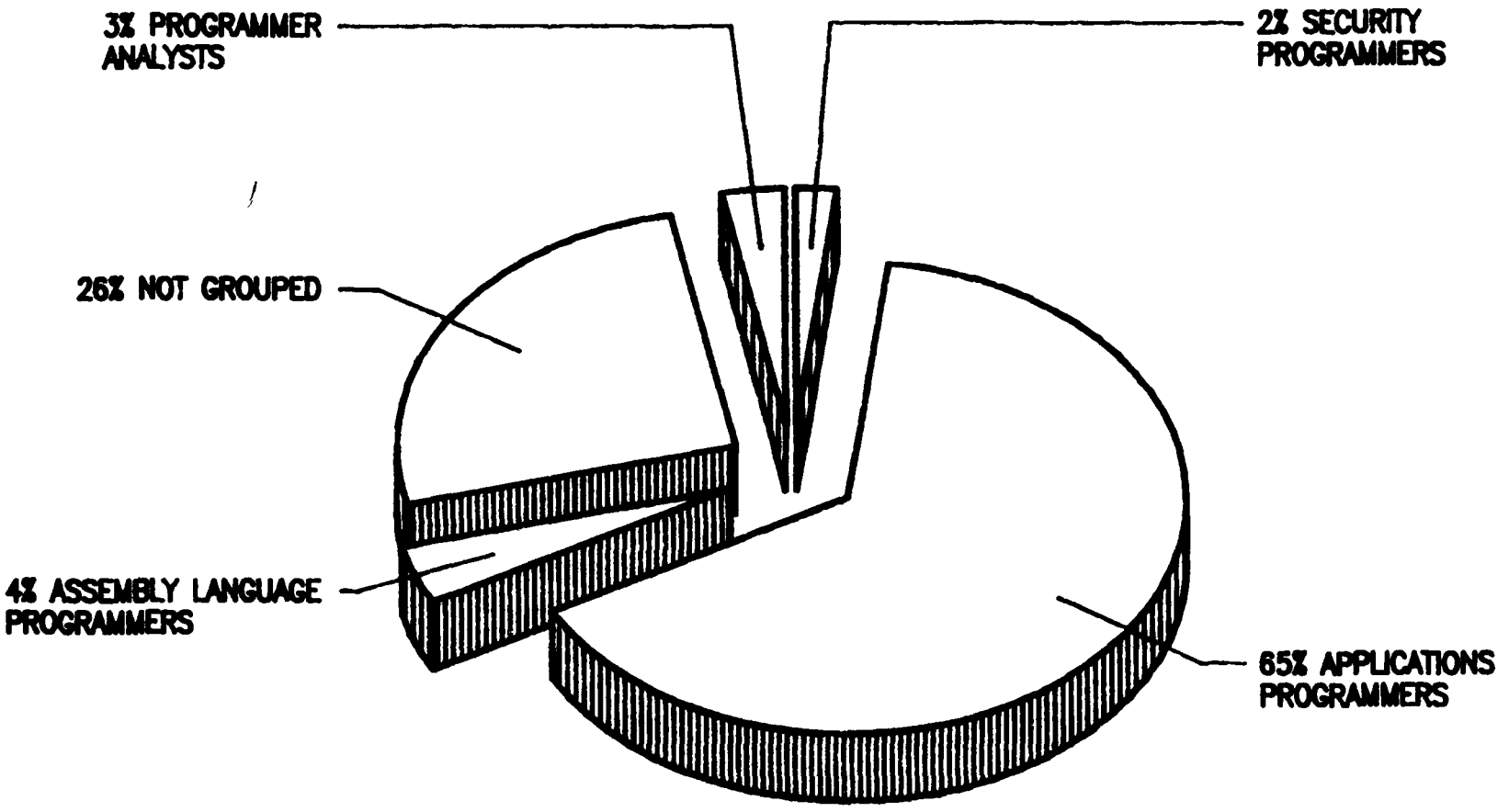

FIGURE 3

resident technical training. TE and TD ratings, composed of the opinions of experienced personnel in each career ladder, are secondary factors that may assist training developers in deciding which tasks should be emphasized for entry-level training. Those tasks receiving high task factor ratings, but performed by low percentages of first-enlistment personnel, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best left out of training for new personnel, but this decision must be weighed against percentages of personnel performing the tasks and other task considerations. Examples of tasks rated high in TE and TD for AFSC 491X1 personnel are shown in Tables 15 and 16. Examples of tasks rated high in TE and TD for AFSC 491X2 personnel are shown in Tables 17 and 18.

AFSC 491X1 Training Issues

A. AFSC 491X1 First-Enlistment Personnel. AFSC 491X1 first-enlistment personnel grouped almost evenly within one of two major clusters, either the COMPUTER OPERATIONS PERSONNEL cluster, or the COMMUNICATIONS OPERATIONS PERSONNEL cluster. Each cluster contained approximately 40 percent of the first-enlistment personnel (see Figure 2). Smaller jobs with other first-enlistment personnel include: FUNCTIONAL AREA MANAGERS, MESSAGE DISTRIBUTION CENTER PERSONNEL, and SWITCHBOARD OPERATORS. Ten percent of the first-enlistment personnel did not group with any job because of the uniqueness of their job or the manner in which they responded to our survey. As a group, first-enlistment personnel are somewhat more homogeneous than the career ladder as a whole, with 11 tasks being performed by 50 percent or more members. As shown by Table 19, most of the common functions performed by this group deal with communications-computer systems operator functions, while security and general communications-computer systems functions were also emphasized. Examples of tasks performed by AFSC 491X1 first-enlistment personnel are shown in Table 20.

B. AFSC 491X1 Specialty Training Standard (STS). An STS is intended to provide comprehensive coverage of tasks performed by career ladder personnel. To assess the effectiveness of the November 1987 AFSC 491X1 STS, survey data were compared to STS elements. Sections containing managerial, general information, or knowledge areas were not reviewed. In addition to examining how well survey data supported STS items, also explored were the additional areas which might need to be included in the STS, based on survey findings. Subsequent to the initial review of this STS, the STS was modified by members of the previously mentioned May 1988 Utilization and Training Workshop at Keesler AFB MS. Therefore, the following analysis will deal only with the new STS. During the U&TW, members determined which elements needed to be trained at the 3-level course. For eight of these elements, the data for the criterion group (1-48 months TAFMS) indicated that course training did not appear warranted. Members justified training of these elements, based on the critical nature of the elements and the adverse consequences of inadequate performance. Examples of these elements are shown in Table 21.

TABLE 15

REPRESENTATIVE TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)
BY 491X1 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING FIRST JOB (N=421)	PERCENT MEMBERS PERFORMING FIRST ENLISTMENT (N=967)	TRAINING EMPHASIS*	TASK DIFFICULTY**
F178	POWER UP OR DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	68	65	6.18	4.69
Q562	REPORT SECURITY VIOLATIONS	33	36	6.10	5.13
F188	RESPOND TO SYSTEM REQUESTS	57	56	5.88	4.58
E090	CHECK OPERATIONAL STATUS OF EQUIPMENT	53	55	5.81	4.54
F176	PERFORM OR PRACTICE COMMUNICATIONS-COMPUTER SYSTEMS EMERGENCY PROCEDURES	43	44	5.78	5.03
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	41	44	5.70	4.44
F143	ENTER DATA VIA CONSOLE	49	48	5.62	4.49
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	46	47	5.61	4.62
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	54	53	5.58	4.57
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	41	44	5.49	6.60
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	47	48	5.45	5.97
F150	INTERPRET INDICATING LIGHTS ON PERIPHERAL EQUIPMENT	46	44	5.41	4.68

* Mean TE rating is 1.70 and Standard Deviation is 1.43 (High TE = 3.13)
** Average TD rating is 5.00

TABLE 16

REPRESENTATIVE TASKS RATED HIGHEST IN TASK DIFFICULTY
FOR AFSC 491X1

TASKS		TD RATING
F141	DEVELOP MICROFILM	7.20
E088	ANALYZE COMPUTER PERFORMANCE MEASUREMENT DATA	7.06
F154	ISOLATE PROBLEMS ON PRODUCTION RUNS	6.95
F131	ALIGN COMPUTER OUTPUT MICROFILM (COM) CAMERAS	6.88
E089	ANALYZE OR EVALUATE STATISTICAL DATA	6.86
E130	WORK WITH CUSTOMERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	6.74
M301	COMPILE TELEPHONE DIRECTORIES	6.70
G209	RESIZE DATA BASE AREA	6.61
F134	CHANGE INTERNAL COMPONENTS OF MICROCOMPUTERS	6.61
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	6.60
F152	INTERROGATE MEMORY LOCATION VIA CONSOLES	6.51
E87	ANALYZE CIRCUIT, COMMUNICATION LINE, OR EQUIPMENT OUTAGE REPORTS	6.45
G195	ALIGN FILES ON DISC	6.38

TABLE 17

REPRESENTATIVE TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)
BY 491X2 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING 1ST JOB (N=101)	1ST ENL (N=151)	TNG EMP*	TASK DIFF**
D400	DEBUG COMPUTER PROGRAMS	87	87	7.80	6.34
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	83	82	7.35	6.34
0404	DESK CHECK PROGRAMS	80	79	7.33	5.46
0398	COMPILE OR ASSEMBLE PROGRAMS	84	84	7.31	4.92
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	77	77	7.16	6.42
P523	TEST COMPUTER PROGRAMS	66	68	6.55	5.82
0473	REVIEW SOURCE CODE LISTINGS	59	60	5.96	5.25
0483	WRITE FUNCTIONAL APPLICATIONS PROGRAMS	43	47	5.86	6.30
0402	DESIGN ERROR HANDLING ROUTINES	45	48	5.84	5.91
Q562	REPORT SECURITY VIOLATIONS	45	48	5.84	4.09
0397	CODE JOB CONTROL RUN STREAMS IN JOB CONTROL LANGUAGES	46	56	5.71	5.69
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	14	21	5.39	4.06

* Mean TE rating is 1.88 and Standard Deviation is 1.41 (High TE = 3.29)
** Average TD rating is 5.00

TABLE 18

REPRESENTATIVE TASKS RATED HIGHEST IN TASK DIFFICULTY
FOR AFSC 491X2

TASKS		TD RATING*
0389	ANALYZE SYSTEM DUMPS	7.59
0393	CODE COMPUTER PROGRAMS IN ASSEMBLY LANGUAGES	7.38
0438	MODIFY SOFTWARE USING MACHINE CODE	7.20
0388	ANALYZE PROGRAM DUMPS	7.11
0487	WRITE OPERATING SYSTEM PROGRAMS	7.03
N329	DESIGN COMMUNICATIONS-COMPUTER SYSTEMS INTERFACE OR INTEGRATION REQUIREMENTS	6.87
N337	DESIGN REMOTE TERMINAL NETWORKS	6.75
0423	EVALUATE CONTRACT CHANGE PACKAGES	6.73
0482	WRITE DATA COMMUNICATIONS PROGRAMS	6.71
N324	ANALYZE DATA BASE REQUIREMENTS	6.69
N330	DESIGN DATA BASE SPECIFICATIONS	6.69
N351	DEVELOP MODELS TO SIMULATE FUNCTIONAL REQUIREMENTS	6.66
N335	DESIGN OPERATING SYSTEMS INTERFACE OR INTEGRATION REQUIREMENTS	6.65

* Average TD rating = 5.00, Standard Deviation = 1.00

TABLE 19

PERCENT TIME SPENT ON DUTIES BY 491X1 FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

	DUTIES	PERCENT TIME SPENT
A	ORGANIZING AND PLANNING	2
B	DIRECTING AND IMPLEMENTING	1
C	INSPECTING AND EVALUATING	1
D	TRAINING	2
E	PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS FUNCTIONS	17
F	PERFORMING COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR FUNCTIONS	29
G	PERFORMING PRODUCTION CONTROL OR SYSTEM MONITOR FUNCTIONS	3
H	PERFORMING GENERAL COMMUNICATIONS FUNCTIONS	1
I	PROCESSING MESSAGES	11
J	PERFORMING TELECOMMUNICATIONS TRAFFIC ANALYSES FUNCTIONS	2
K	PERFORMING MAGNETIC MEDIA LIBRARY FUNCTIONS	5
L	PERFORMING COMMUNICATIONS-COMPUTER MOBILITY FUNCTIONS	1
M	OPERATING NON-MOBILE TELEPHONE SWITCHBOARDS	3
N	PERFORMING SOFTWARE PLANNING AND DESIGN	-
O	PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE	2
P	PERFORMING SOFTWARE TESTING, QUALITY ASSURANCE, AND CONFIGURATION MGT FUNCTIONS	-
Q	MAINTAINING SECURITY	17
R	PERFORMING SUPPLY OR CONTRACTING FUNCTIONS	2

- Denotes less than 1 percent
Note: Columns may not add up to 100 percent due to rounding

TABLE 20

REPRESENTATIVE TASKS PERFORMED BY AFSC 491X1 FIRST ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS		PERCENT MEMBERS PERFORMING (N=967)
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	66
Q538	ESCORT VISITORS THROUGH FACILITIES	65
F178	POWER UP OR DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	65
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	65
E094	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	60
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	60
F188	RESPOND TO SYSTEM REQUESTS	56
E090	CHECK OPERATIONAL STATUS OF EQUIPMENT	55
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	53
F190	SET OR RESET COMPUTER TIME CLOCKS	53
E115	PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY, OR DISTRIBUTION	50
E110	MAKE ENTRIES ON SHIFT SUPERVISOR LOGS	49
F174	PERFORM OPERATOR MAINTENANCE ON COMMUNICATIONS-COMPUTER SYSTEMS OR EQUIPMENT	49
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	49
F143	ENTER DATA VIA CONSOLE	48
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	48
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	47
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	47
Q537	DISTRIBUTE CLASSIFIED MATERIAL	46
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	45
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	44
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	44
I240	PREPARE SERVICE MESSAGES	43
I229	FOLLOW UP SERVICE MESSAGES	41
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	41

TABLE 21

AFSC 491X1 STS ELEMENTS REQUIRING REVIEW

STS ITEM (WITH SELECTED SAMPLE TASKS)		3 LVL PROF CODE	PERCENT MEMBERS PERFORMING				TNG EMP*	TASK DIFF**
			1ST JOB (N=421)	1ST ENL (N=967)	DAFSC 49151 (N=1,585)	DAFSC 49171 (N=800)		
6g(1)	USE ROUTING PROCEDURES FOR PROCESSING INFORMATION - PRIMARY	2b						
	I238 PREPARE MESSAGES FOR ENCRYPTION OR DECRYPTION		11	11	11	6	3.00	4.95
	I239 PREPARE PAPER TAPE MESSAGES		25	23	22	10	2.79	4.46
7a(4)b	PERFORM SYSTEM STARTUP PROCEDURES-COMMUNICATION PROCESSING	2b						
	F192 TEST MODEMS		16	16	17	14	2.54	4.77
	L292 PREPARE COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT FOR OPERATION		4	4	5	5	1.50	5.33
7b(1)(d)	ADJUST RUN SEQUENCE FOR EFFECTIVE SYSTEM UTILIZATION	2b						
	F165 MONITOR INTERACTIVE PROCESSING		13	13	12	11	3.06	5.14

* Mean TE rating is 1.70 and Standard Deviation is 1.43 (High TE = 3.13)
** Average TD rating is 5.00

Altogether, 19 elements from the new STS were considered below the 3-skill level proficiency coding indicated by survey data. These elements were also reviewed by members of the U&TW, and it was determined it was beyond the scope of the technical school to train above the proficiency level presently taught. Examples of these elements appear in Table 22.

An additional area of analysis involves examining tasks not matched to any STS element. Unreferenced tasks performed by at least 20 percent of a group in the career ladder should be considered for inclusion in the STS. Additionally, tasks with high TE or TD ratings should be examined for possible STS inclusion. Overall, the STS had very extensive coverage as only two technical tasks were not referenced to the STS. These tasks are shown in Table 23. Overall, occupational survey data was used to modify 3-skill level proficiency coding for 22 STS elements.

C. AFSC 49131 Plan of Instruction (POI). Based on the assistance from technical school subject-matter experts in matching inventory tasks to the E3ABR49131 000 POI, dated 1 June 1987, a computer printout was then generated to display the results of the matching for use in this analysis and for a detailed review of training. A Plan of Instruction generally contains two types of objectives: knowledge objectives and performance objectives. Since task statements are relevant to performance objectives, rather than knowledge objectives, only performance objectives are reviewed in this analysis.

Guidelines outlined in ATCR 52-22 state a POI objective is supported for training if 30 percent or more of all first-job (1-24 months TAFMS) or first-enlistment (1-48 months TAFMS) personnel perform related tasks. A review of tasks matched to the POI reveals that most POI blocks and units of instruction are well supported by survey data, based on percentages of first-term personnel performing tasks or high TE or TD ratings. There are four units of instruction, however, which contain objectives that are not well supported by survey data and require further evaluation by training personnel. These four units of instruction are shown in Table 24.

Additionally, some tasks with high TE ratings, sufficiently high TD ratings, and 30 percent or more first-job or first-enlistment personnel performing were not matched to any POI blocks of instructions. This combination of factors indicated formal training may be required and resident technical training could be supported. Table 25 shows examples of these tasks.

AFSC 491X2 Training Issues

A. AFSC 491X2 First-Enlistment Personnel. AFSC 491X2 first-enlistment personnel grouped almost entirely with the COMPUTER PROGRAMMERS cluster. Sixty-five percent of these first-enlistment personnel grouped into the APPLICATIONS PROGRAMMERS job within the cluster. Other jobs containing small numbers of first-enlistment personnel include PROGRAMMER ANALYSTS and ASSEMBLY LANGUAGE PROGRAMMERS. These airmen spend one-half of their time on software development, implementation, and maintenance, and 14 percent of their time on

TABLE 22

EXAMPLES OF STS ELEMENTS WARRANTING HIGHER 3-LVL PROFICIENCY CODING, BUT BEYOND THE SCOPE OF THE SCHOOL TO TRAIN

STS ITEM (WITH SELECTED SAMPLE TASKS)		3 LVL PROF CODE	PERCENT MEMBERS PERFORMING				TNG EMP*	TASK DIFF**
			1ST JOB (N=421)	1ST ENL (N=967)	DAFSC 49151 (N=1,585)	DAFSC 49171 (N=800)		
5c(3)	REPORTS OF SECURITY VIOLATIONS	B						
	Q562 REPORT SECURITY VIOLATIONS		33	36	39	46	6.10	5.13
5d(1)	CONTROL OF ACCESS TO SECURE AREAS	B						
	Q538 ESCORT VISITORS THROUGH FACILITIES		59	65	69	68	4.71	3.98
	Q529 AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS		46	47	49	47	5.61	4.62
6e(2)	USE DISTRIBUTION CONTROL PROCEDURES	A						
	E94 DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS		62	60	55	32	5.22	3.77
	E115 PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY OR DISTRIBUTION		52	50	47	33	4.33	3.82
6h(2)(b)	GENERATE SERVICE ACTIONS ON MESSAGES - MISSENT	-						
	I240 PREPARE SERVICE MESSAGES		42	43	44	22	4.26	4.73

* Mean TE rating is 1.70 and Standard Deviation is 1.43 (High TE = 3.13)
** Average TD rating is 5.00

TABLE 23

TECHNICAL TASKS PERFORMED BY 20 PERCENT
OR MORE 491X1 GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS		PERCENT MEMBERS PERFORMING				
		1ST JOB (N=421)	1ST ENL (N=967)	5-LVL (N=1,585)	7-LVL (N=800)	TNG EMP
F161	MAKE ENTRIES ON WORK OR RUN REQUESTS, SUCH AS INITIALS, REMARKS, OR PANEL READINGS	24	25	21	14	3.02
I245	RETRIEVE MESSAGES MANUALLY	17	20	21	9	3.02

* Mean TE rating is 1.70 and Standard Deviation is 1.43 (High TE = 3.13)

TABLE 24

OBJECTIVES FROM POI E3ABR49131 WITH LESS THAN
30 PERCENT ALL FIRST-TERMERS PERFORMING

TASKS		PERCENT MEMBERS PERFORMING 1ST JOB (N=421)	1ST ENL (N=967)	TNG EMP*	TASK DIFF**
I7a	INTERPRET A MESSAGE ON A DATA CARD WITH AT LEAST 70% ACCURACY (2 HRS)				
E103	INTERPRET OR VERIFY CARDS VISUALLY	19	21	2.92	4.65
I7b	IDENTIFY SPECIFIED FUNCTIONS OF THE LAYOUT OF A PUNCHED CARD WITH AT LEAST 80% ACCURACY (2 HRS)				
E103	INTERPRET OR VERIFY CARDS VISUALLY	19	21	2.92	4.65
III31	GIVEN SELECTED IPC EQUIPMENT, TOI-4, AF FORM 597, AND A SYNOPSIS ABOUT THAT EQUIPMENT, DOCUMENT THE MACHINES MAINTENANCE ON THE AF FORM 597 WITH A MAXIMUM OF ONE INSTRUCTOR ASSIST (3 HRS)				
E108	MAKE ENTRIES ON EQUIPMENT MAINTENANCE RECORDS	22	23	4.45	4.10
V4b	CONSTRUCT HEADER AND TRAILER CARDS FOR DD FORMS 1392 WITH NO MORE THAN TWO INSTRUCTOR ASSISTS PER MESSAGE (2.5 HRS)				
I237	PREPARE HEADERS AND END OF TRANSMISSION (EOT) CARDS FOR DATA MESSAGES	24	23	3.36	4.23

* Mean TE is 1.70 and Standard Deviation is 1.43 (High TE = 3.13)
** Average TD is 5.00

TABLE 25

EXAMPLES OF TASKS NOT REFERENCED TO POI E3ABR49131
WITH 30 PERCENT OR MORE PERFORMING

TASKS		PERCENT MEMBERS PERFORMING 1ST JOB (N=421)	1ST ENL (N=967)	TNG EMP	TASK DIFF
E115	PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY, OR DISTRIBUTION	52	50	4.33	3.82
E93	COORDINATE WITH SUBSCRIBERS OR CUSTOMERS ON MATTERS SUCH AS OPERATIONAL OR PROCEDURAL PROBLEMS	33	39	4.38	5.94
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	41	44	5.49	6.60
F172	PERFORM COMMUNICATIONS-COMPUTER SYSTEM INITIALIZATION PROCEDURES	39	38	4.90	5.92
F176	PERFORM OR PRACTICE COMMUNICATIONS-COMPUTER SYSTEMS EMERGENCY PROCEDURES	43	44	5.78	5.03
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	47	48	5.45	5.97
Q562	REPORT SECURITY VIOLATIONS	33	36	6.10	5.13

* Mean TE rating is 1.70 and Standard Deviation is 1.43 (High TE = 3.13)
** Average TD rating is 5.00

software planning and design. Time spent across duties for first-enlistment personnel are shown in Table 26. Tasks which are representative of AFSC 491X2 first-enlistment personnel are shown in Table 27.

B. AFSC 491X2 Specialty Training Standard (STS). To assess the effectiveness of the 491X2 STS, dated August 1985, survey data were matched to STS elements. Once again, elements containing managerial, general information, or knowledge areas were not reviewed. Since the 491X2 STS was also modified at the previously mentioned U&TW, the following analysis will deal only with the new STS. As in the case with the 491X1 STS, members of the U&TW determined which elements needed to be trained at the 3-level course. For two of these elements, the data for the criterion group (1-48 months TAFMS) indicated that course training did not appear warranted. Members justified training of these elements based on the critical nature of the elements and the adverse consequences of inadequate performance. These elements are shown in Table 28.

Altogether, 5 elements from the new STS were considered below the 3-skill level proficiency coding indicated by survey data. These elements were also reviewed by members of the U&TW, and it was determined it was beyond the scope of the technical school to train above the proficiency level presently taught. Examples of these elements appear in Table 29.

As with the AFSC 491X1 STS, tasks with greater than 20 percent members performing or with high TE or TD should be considered for inclusion in the STS. There were a number of tasks which met this criteria not referenced to the STS. Examples of these tasks appear in Table 30. These tasks should be reviewed by training personnel and functional managers for possible inclusion in the STS.

C. AFSC 49132 Plan of Instruction (POI). As in the case with the 491X1 POI, technical school subject-matter experts provided a match of inventory tasks to POI E3ABR49132 000, dated 16 September 1985. Computer printouts were then generated to display the results of the matching for use in this analysis and for a detailed review of training. Once again, only performance objectives are reviewed in this analysis.

Based on the guidelines outlined in ATCR 52-22, a review of tasks matched to the POI reveals several POI objectives which were not supported by survey data. Examples of these POI objectives appear in Table 31. These blocks should be reviewed by training personnel to determine the necessity of continued training of those blocks.

In addition, some tasks with high TE ratings, sufficiently high TD ratings, and 30 percent or more first-job or first-enlistment personnel performing were not matched to any POI blocks of instructions. This combination of factors indicate formal training may be required and resident technical training could be supported. Table 32 shows examples of these tasks.

TABLE 26

PERCENT TIME SPENT ON DUTIES BY 491X2 FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

DUTIES	PERCENT TIME SPENT
A ORGANIZING AND PLANNING	2
B DIRECTING AND IMPLEMENTING	1
C INSPECTING AND EVALUATING	-
D TRAINING	1
E PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS FUNCTIONS	9
F PERFORMING COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR FUNCTIONS	7
G PERFORMING PRODUCTION CONTROL OR SYSTEMS MONITOR FUNCTIONS	2
H PERFORMING GENERAL COMMUNICATIONS FUNCTIONS	-
I PROCESSING MESSAGES	-
J PERFORMING TELECOMMUNICATIONS TRAFFIC ANALYSES FUNCTIONS	-
K PERFORMING MAGNETIC MEDIA LIBRARY FUNCTIONS	-
L PERFORMING COMMUNICATIONS-COMPUTER MOBILITY FUNCTIONS	-
M OPERATING NON-MOBILE TELEPHONE SWITCHBOARDS	-
N PERFORMING SOFTWARE PLANNING AND DESIGN	14
O PERFORMING SOFTWARE DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE	50
P PERFORMING SOFTWARE TESTING, QUALITY ASSURANCE AND CONFIGURATION MANAGEMENT	6
Q MAINTAINING SECURITY	6
R PERFORMING SUPPLY OR CONTRACTING FUNCTIONS	2

- Denotes less than 1 percent
Note: Columns may not add up to 100 percent due to rounding

TABLE 27

REPRESENTATIVE TASKS PERFORMED BY AFSC 491X2 FIRST ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS		PERCENT MEMBERS PERFORMING
D400	DEBUG COMPUTER PROGRAMS	87
0398	COMPILE OR ASSEMBLE PROGRAMS	84
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	82
0404	DESK CHECK PROGRAMS	79
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	77
P523	TEST COMPUTER PROGRAMS	68
0473	REVIEW SOURCE CODE LISTINGS	60
N333	DESIGN INPUT OR OUTPUT FORMATS	58
0484	WRITE JOB CONTROL RUN STREAMS	50
0402	DESIGN ERROR HANDLING ROUTINES	48
0483	WRITE FUNCTIONAL APPLICATIONS PROGRAMS	47
0399	COORDINATE WITH USERS ON NEW SYSTEMS RELEASES	46
N372	PREPARE INPUT OR OUTPUT FILE SPECIFICATIONS	44
0465	REVIEW INPUT OR OUTPUT FORMATS	40
0478	WRITE APPLICATIONS PROGRAMS UTILIZING DATA MANIPULATION LANGUAGES	40
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	40
F171	PARTICIPATE WITH PROGRAMMER IN TESTING OR DEBUGGING PROGRAMS	39
0467	REVIEW PROGRAM SPECIFICATIONS	38
N326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	36
0488	WRITE UTILITY PROGRAMS	36
N331	DESIGN DATA ELEMENTS OR CODES	36
0387	ANALYZE JOB STREAMS	34

TABLE 28

AFSC 491X2 STS ELEMENTS REQUIRING REVIEW

STS ITEM (WITH SELECTED SAMPLE TASKS)	3 LVL PROF CODE	PERCENT MEMBERS PERFORMING				TNG EMP*	TASK DIFF**
		1ST JOB (N=101)	1ST ENL (N=151)	DAFSC 49151 (N=336)	DAFSC 49171 (N=276)		
7b(3) PREPARE TEST DATA	1b						
P508 PREPARE SYSTEM OR PROGRAM TEST DATA		14	18	22	25	3.24	5.53
7f USE PERIPHERAL DEVICES	1b						
F178 POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT		19	21	22	27	2.47	4.01

* Mean TE rating is 1.88 and Standard Deviation is 1.41 (High TE = 3.29)
** Mean TD rating is 5.00

TABLE 29

EXAMPLES OF AFSC 491X2 STS ELEMENTS WARRANTING HIGHER 3-LVL PROFICIENCY CODING, BUT BEYOND THE SCOPE OF THE SCHOOL TO TRAIN

STS ITEM (WITH SELECTED SAMPLE TASKS)	3 LVL PROF CODE	PERCENT MEMBERS PERFORMING				TNG EMP*	TASK DIFF**
		1ST JOB (N=101)	1ST ENL (N=151)	DAFSC 49151 (N=336)	DAFSC 49171 (N=276)		
6b COMMUNICATIONS SYSTEMS	A						
0488 WRITE UTILITY PROGRAMS		32	36	32	37	5.10	6.27
N340 DETERMINE COMMUNICATIONS-COMPUTER SYSTEMS INPUT REQUIREMENTS		19	19	19	36	3.65	5.86
6c(3) COMMUNICATION PROTOCOLS-MODES OF OPERATION	A						
0402 DESIGN ERROR HANDLING ROUTINES		45	48	43	44	5.84	5.91
N323 ANALYZE CURRENT COMMUNICATIONS-COMPUTER SYSTEMS PROCESSING CAPABILITIES		23	24	27	28	2.10	6.59
6(d)(1) MESSAGE SWITCHING OPERATIONS - STORE AND FORWARD	A						
N373 PREPARE OR REVISE PROGRAM SPECIFICATIONS		32	38	36	43	4.02	5.89
N380 REVIEW PROGRAMMING STANDARDS		24	28	28	29	3.51	5.80
6(d)(5) MESSAGE SWITCHING OPERATIONS - MESSAGE EXCHANGE	A						
0402 DESIGN ERROR HANDLING RATINGS		45	48	43	44	5.84	5.91
N380 REVIEW PROGRAMMING STANDARDS		24	28	28	29	3.51	5.80

* Mean TE rating is 1.88 and Standard Deviation is 1.41 (High TE = 3.29)
** Average TD rating is 5.00

TABLE 30

EXAMPLES OF TASKS PERFORMED BY 20 PERCENT OR MORE
491X2 PERSONNEL MEMBERS AND NOT REFERENCED TO THE STS

TASKS		PERCENT MEMBERS PERFORMING				
		1ST JOB (N=101)	1ST ENL (N=151)	5-LVL (N=336)	7-LVL (N=276)	TNG EMP*
0435	MAINTAIN SOURCE CODE LISTINGS	61	58	58	55	5.14
E101	INITIALIZE PROCESSING, SUCH AS BATCHED JOB, ON-LINE, OR OFF-LINE	31	34	31	32	3.25
E116	PROVIDE CUSTOMERS WITH SYSTEM DOCUMENTATION CHANGES	29	31	28	33	3.12
0387	ANALYZE JOB STREAMS	30	34	33	29	4.22
0407	DETERMINE DATA BASE CURRENCY OR ACCURACY	25	32	30	37	4.94
E113	PERFORM CALCULATIONS WITHIN A NUMBERING SYSTEM, OTHER THAN DECIMAL, USING PENCIL AND PAPER	23	27	29	32	4.47
E114	PERFORM CHARACTER CONVERSIONS USING CHARACTER CONVERSION CHARTS, SUCH AS ASCII TO BCD OR ACII TO EBCDIC	17	22	20	18	4.08
0454	REVIEW CHANGES TO DATA BASE	12	12	16	21	3.43
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	13	13	20	26	2.59
0428	EVALUATE SOFTWARE BASELINE CHANGE REQUESTS	12	16	15	27	2.63

* Mean TE rating is 1.88 and Standard Deviation is 1.41 (High TE = 3.29)
** Average TD rating is 5.00

TABLE 31

OBJECTIVES FROM POI E3ABR49132 WITH LESS THAN
30 PERCENT ALL FIRST-TERMERS PERFORMING

TASKS		PERCENT MEMBERS PERFORMING 1ST JOB (N=421)	1ST ENL (N=967)	TNG EMP*	TASK DIFF**
I6a	GIVEN FOUR NUMBERS IN ANY OF FOUR BASES, CORRECTLY CONVERT AT LEAST THREE TO A SPECIFIED BASE (1 HR)				
E113	PERFORM CALCULATIONS WITHIN A NUMBERING SYSTEM, OTHER THAN DECIMAL, USING PENCIL AND PAPER	23	27	4.47	5.60
II5e	GIVEN SELECTED REFERENCE MATERIALS AND TWO PROBLEM SPECIFICATIONS, SOLVE ONE PROBLEM USING PDL AND ONE PROBLEM USING FC FOR THE IF-THEN-ELSE PRIMITIVE (3 HRS)				
N369	PREPARE COMMUNICATIONS-COMPUTER SYSTEMS OF PROGRAM DECISION LOGIC TABLES	1	5	3.73	6.11
II6c	GIVEN SELECTED REFERENCE MATERIALS AND PROBLEM SPECIFICATIONS, PRODUCE A STRUCTURED SOLUTION USING THE TABLE BUILD AND THE SORT ROUTINES (2 HRS)				
0412	DEVELOP DATA BASE UPDATE PROCEDURES	24	26	4.88	5.92
0436	MODIFY COMMUNICATIONS-COMPUTER SYSTEMS APPLICATIONS	14	17	4.55	5.79
II6j	GIVEN SELECTED REFERENCE MATERIALS AND PROBLEM SPECIFICATIONS PRODUCE A STRUCTURED SOLUTION USING THE DELETE, AS A PROGRAMMING TEAM MEMBER 91HR)				
N357	ESTABLISH SYSTEM STUDY OBJECTIVES	2	3	.75	6.34

* Mean TE = 1.88, High TE 3.29
** Mean TD = 5.00

TABLE 32

EXAMPLES OF TASKS NOT REFERENCED TO POI E3ABR49132
WITH 30 PERCENT OR MORE PERFORMING

TASKS NOT REFERENCED		PERCENT MEMBERS PERFORMING			
		1ST JOB (N=421)	1ST ENL (N=967)	TNG EMP	TASK DIFF
E101	INITIALIZE PROCESSING, SUCH AS BATCHED JOB, ON-LINE, OR OFF-LINE	31	34	3.25	4.17
E116	PROVIDE CUSTOMERS WITH SYSTEM DOCUMENTATION CHANGES	29	31	3.12	4.00
N324	ANALYZE DATA BASE REQUIREMENTS	26	30	3.45	6.69
0395	CODE COMPUTER PROGRAMS IN TRANSLATOR OR INTERPRETER LANGUAGES	29	32	4.43	6.19
0402	DESIGN ERROR HANDLING ROUTINES	45	48	5.84	5.91
0466	REVIEW PROGRAM MAINTENANCE MANUALS	30	34	5.35	4.92
0471	REVIEW SOFTWARE PROBLEM REPORTS	27	31	4.69	5.32

* Mean TE rating is 1.88 and Standard Deviation is 1.41 (High TE = 3.29)
** Average TD is 5.00

JOB SATISFACTION ANALYSIS

An examination of the AFSC 491X1 job satisfaction indicators of each experience group provides some understanding of factors which may affect the job performance of AFSC 491X1 personnel. Job satisfaction indicators for AFSC 491X1 TAFMS groups are shown in Table 33. These are displayed alongside a comparative sample of similar career ladders surveyed in 1987. This gives a relative measure of how the job satisfaction of personnel in AFSC 491X1 compares with other similar career ladders in the Air Force. Job satisfaction indicators from the previous surveys of pre-merger AFSCs (511X0, 291X0, and 295X0) were also analyzed to examine any possible changes in job satisfaction which may have been caused by the merger. Finally, job satisfaction across specialty jobs were examined to determine how overall job satisfaction may be influenced by the specific job performed.

Five attitude questions covering job interest, perceived utilization of talents, perceived utilization of training, sense of accomplishment from the job, and reenlistment intentions provide indications of job satisfaction. The analysis comparing current and previous survey job satisfaction indicators does not include sense of accomplishment results due to a lack of data on those questions from the previous surveys of the merged AFSCs.

Table 33 shows overall job satisfaction for the AFSC 491X1 career ladder to be fairly positive, while a comparison of AFSC 491X1 job satisfaction indicators to comparative data shows AFSC 491X1 personnel to have approximately equal to slightly lower job satisfaction indicators. An analysis of the job satisfaction data compared to the pre-merger AFSC job satisfaction data shows the former 291X0 AFSC to have had somewhat low job satisfaction, while AFSC 295X0 and 511X0 personnel had relatively higher job satisfaction (see Table 34). The current job satisfaction for AFSC 491X1 personnel is a blend of those job satisfactions which existed among the pre-merger AFSCs. Generally, the current job satisfaction is higher than the former 291X0 AFSC, but lower than the former 511X0 and 295X0 AFSCs. This finding indicates the merger has not had any meaningful impact on the career ladder's overall job satisfaction.

AFSC 491X2 personnel were also matched against the same comparative sample as AFSC 491X1 personnel. This career ladder also had positive responses to the job satisfaction indicators and generally had higher responses than the comparative sample (see Table 35). This was especially true in the 1-48 and 49-96 months TAFMS groups, who found their jobs much more interesting than the comparative sample. Senior career ladder members displayed job satisfaction indicators approximately equal to that of the comparative sample. It is interesting to note, while the 1-48 and 49-96 months TAFMS groups find their jobs interesting, their career reenlistment intentions are much lower than that of the comparative sample. Overall, job satisfaction for this career ladder has remained stable and has even increased. This is evident by an upward trend in the reenlistment intentions across all three TAFMS groups since the last time the career ladder was surveyed. Table 36 shows job satisfaction indicators compared to the previous AFSC 511X1 survey.

TABLE 33

COMPARISON OF AFSC 491X1 TAFMS JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	AFSC 491X1 (N=967)	1987 COMPSAMPLE (N=3,327)	AFSC 491X1 (N=692)	1987 COMPSAMPLE (N=1,176)	AFSC 491X1 (N=1,014)	1987 COMPSAMPLE (N=2,227)
EXPRESSED JOB INTEREST:						
INTERESTING	60	56	57	64	68	73
SO-SO	19	23	21	20	15	15
DULL	21	20	23	15	16	11
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	67	65	66	72	72	79
LITTLE OR NOT AT ALL	33	35	34	28	28	20
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	71	76	66	72	61	75
LITTLE OR NOT AT ALL	29	23	34	27	38	24
SENSE OF ACCOMPLISHMENT FROM WORK:						
SATISFIED	58	58	53	63	58	68
NEUTRAL	16	15	13	11	11	10
DISSATISFIED	26	26	33	25	30	21
REENLISTMENT INTENTIONS:						
WILL/PROBABLY REENLIST	57	60	65	74	71	69
WILL NOT/PROBABLY REENLIST	42	38	35	23	11	9
WILL RETIRE	0	0	0	0	17	21

* Columns may not add up to 100 percent due to nonresponse and rounding
** Comparative sample is composed of all no lateral direct support career ladders surveyed in 1987 (Includes AFSCs 391X0, 392X0, 552X5, 566X0, 603X0, and 612X0)

TABLE 34

JOB SATISFACTION INDICATORS FOR 491X1 PERSONNEL
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS				49-96 MOS TAFMS				97+ MOS TAFMS			
	1982 291X1 (N=1,230)	1982 295X0 (N=258)	1980 511X0 (N=905)	1988 491X1 (N=967)	1982 291X1 (N=473)	1982 295X0 (N=116)	1980 511X0 (N=571)	1988 491X1 (N=692)	1982 291X0 (N=1,014)	1982 295X0 (N=128)	1980 511X0 (N=752)	1988 491X1 (N=1,014)
EXPRESSED JOB INTEREST:												
INTERESTING	42	64	69	60	51	72	66	57	66	69	65	68
SO-SO	26	16	13	19	22	10	17	21	16	18	15	15
DULL	30	19	16	21	25	17	15	23	17	12	18	16
PERCEIVED USE OF TALENTS:												
FAIRLY WELL TO PERFECTLY	56	70	71	67	62	71	74	66	73	74	72	72
VERY LITTLE OR NOT AT ALL	43	29	29	33	38	28	26	34	27	26	28	28
PERCEIVED USE OF TRAINING:												
FAIRLY WELL TO PERFECTLY	72	63	68	71	72	64	67	66	72	73	69	61
VERY LITTLE OR NOT AT ALL	26	36	31	29	28	36	32	34	28	27	31	38
REENLISTMENT INTENTIONS:												
YES OR PROBABLY YES	41	66	60	57	60	70	59	65	67	48	73	71
NO OR PROBABLY NO	57	28	38	42	39	13	40	35	11	12	25	11

* Columns may not add up to 100 percent due to nonresponse and rounding
** Comparative sample is composed of all no lateral direct support career ladders surveyed in 1987 (Includes AFSCs 391X0, 392X0, 552X5, 566X0, 603X0, and 612X0)

TABLE 35

COMPARISON OF AFSC 491X2 TAFMS JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	AFSC 491X2 (N=231)	1987 COMP SAMPLE (N=3,237)	AFSC 491X2 (N=235)	1987 COMP SAMPLE (N=1,176)	AFSC 491X2 (N=448)	1987 COMP SAMPLE (N=2,227)
EXPRESSED JOB INTEREST:						
INTERESTING	82	56	74	64	78	73
SO-SO	11	23	10	20	11	15
DULL	7	20	15	15	11	11
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	85	65	73	72	80	79
VERY LITTLE OR NOT AT ALL	15	35	27	28	20	20
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	74	76	62	72	63	75
VERY LITTLE OR NOT AT ALL	26	23	34	27	36	24
SENSE OF ACCOMPLISHMENT FROM WORK:						
SATISFIED	76	58	66	63	68	68
NEUTRAL	10	15	9	11	7	10
DISSATISFIED	14	26	25	25	24	21
REENLISTMENT INTENTIONS:						
WILL/PROBABLY WILL REENLIST	47	60	53	74	72	69
WILL NOT/PROBABLY WILL NOT REENLIST	53	38	47	23	11	9
WILL RETIRE	0	0	0	0	17	21

* Denotes less than 1 percent
** Columns may not add up to 100 percent due to nonresponse and rounding
*** Comparative sample is composed of all no lateral direct support career ladders surveyed in 1987 (Includes AFSCs 391X0, 392X0, 552X5, 566X0, 603X0, and 612X1)

TABLE 36

JOB SATISFACTION INDICATES FOR 491X2 PERSONNEL
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1980 511X1 (N=231)	1988 491X2 (N=151)	1980 511X1 (N=235)	1988 491X2 (N=196)	1980 511X1 (N=448)	1988 491X2 (N=322)
EXPRESSED JOB INTEREST:						
INTERESTING	81	82	77	74	72	78
SO-SO	6	11	12	10	13	11
DULL	9	7	8	15	11	11
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	81	85	78	73	74	80
VERY LITTLE OR NOT AT ALL	19	15	20	27	25	20
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	74	74	67	62	65	63
VERY LITTLE OR NOT AT ALL	25	26	32	34	34	36
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	25	47	43	53	61	72
NO OR PROBABLY NO	75	53	56	47	38	11

* Columns may not add up to 100 percent due to nonresponse and rounding
** Comparative sample is composed of all no lateral direct support career ladders surveyed in 1987 (Includes AFSCs 391X0, 392X0, 552X5, 566X0, 603X0, and 612X0)

Job satisfaction indicators for specialty jobs were also examined to identify jobs having high or low job satisfaction (see Table 37). Jobs with the highest job satisfaction indicators include the Computer Programmers, Technical School Personnel, and Systems Implementation Personnel. The lowest rated jobs included Message Distribution Center Personnel, Switchboard Operators, and Communications Operations Personnel. As expected, most jobs which aligned functionally with a pre-merger AFSC had comparable job satisfaction indicators to those AFSCs.

IMPLICATIONS

As explained in the INTRODUCTION, this survey was requested by HQ USAF/SCBH to assess the impact of the merger which formed these specialties and to gather data for assessing training needs within these two Communications-Computer career ladders. Five jobs and four clusters containing a large number of jobs within them were identified in this survey. All major functions identified in previous surveys were again identified in this survey. Jobs performed by DAFSC 491X2 personnel were very homogeneous, while DAFSC 491X1 personnel performed a much more hetergeneous job. Both career ladders have adequate training programs, although the STSs and POIs from both career ladders need to be reviewed by training personnel and functional managers. According to guidelines in ATCR 52-22, both STSs had 3-skill level proficiency coding below that indicated by survey data, and above that indicated by survey data, while both POIs had unsupported objectives.

Based on such factors as the large number of common tasks performed between the two clusters which aligned with different pre-merger AFSCs; the stable and positive job satisfaction expressed by survey respondents; and the results of the comparisons to previous surveys which identified all major functions performed by the pre-merger AFSCs, the formation of the 491X1 and 491X2 specialties seems to be supported by the results of this survey.

TABLE 37

JOB SATISFACTION INDICATORS SPECIALTY GROUP
(PERCENT MEMBERS RESPONDING)

	COMP OPER PERS (N=856)	COMM OPER PERS (N=822)	FUNC AREA MGRS (N=636)	COMP PROG (N=635)	MSG DIST CTR PERS (N=22)	TECH SCHL PERS (N=28)	SYS IMP PERS (N=17)	RES MGRS (N=38)	SWITCHBRD OPERS (N=33)
EXPRESSED JOB INTEREST:									
INTERESTING	68	49	73	82	41	86	88	71	24
SO-SO	15	25	14	9	23	7	6	21	30
DULL	17	26	11	9	36	7	6	9	45
PERCEIVED USE OF TALENTS:									
FAIRLY WELL TO PERFECTLY	74	59	78	84	36	89	88	76	30
VERY LITTLE OR NOT AT ALL	26	41	22	16	64	11	12	24	70
PERCEIVED USE OF TRAINING:									
FAIRLY WELL TO PERFECTLY	72	72	64	71	59	75	59	34	18
VERY LITTLE OR NOT AT ALL	28	28	35	28	41	25	41	65	82
SENSE OF ACCOMPLISHMENT FROM WORK:									
SATISFIED	62	46	65	72	41	82	94	63	36
NEUTRAL	13	17	10	4	14	4	0	5	18
DISSATISFIED	25	36	24	19	45	14	6	32	15
REENLISTMENT INTENTIONS:									
WILL/PROBABLY WILL REENLIST	65	64	63	59	50	70	65	76	64
WILL NOT/PROBABLY WILL NOT REENLIST	32	33	17	32	45	11	12	18	36
WILL RETIRE	3	3	20	8	5	11	24	5	0

* Denotes less than 1 percent
** Columns may not add up to 100 percent due to nonresponse and rounding

APPENDIX A

TABLE A1

COMPUTER OPERATIONS PERSONNEL

GROUP SIZE: 856
AVERAGE TICF: 54 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 64

PERCENT OF SAMPLE: 25%
AVERAGE TAFMS: 72 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	85
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	85
F188	RESPOND TO SYSTEM REQUESTS	84
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	83
F155	LABEL MAGNETIC MEDIA EXTERNALLY	80
F143	ENTER DATA VIA CONSOLE	74
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	74
Q538	ESCORT VISITORS THROUGH FACILITIES	72
E101	INITIALIZE PROCESSING, SUCH AS BATCHED JOB, ON-LINE, OR OFF-LINE	69
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	69
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	69
E90	CHECK OPERATIONAL STATUS OF EQUIPMENT	68
F190	SET OR RESET COMPUTER TIME CLOCKS	67
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	64
F181	PREPARE PERIPHERAL EQUIPMENT FOR OPERATION	64
F150	INTERPRET INDICATING LIGHTS ON PERIPHERAL EQUIPMENT	63
F174	PERFORM OPERATOR MAINTENANCE ON COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	61
E110	MAKE ENTRIES ON SHIFT SUPERVISOR LOGS	60
F132	ANALYZE CONSOLE DISPLAYS OR SYSTEM PRINTOUTS	59

TABLE A2

COMPUTER OPERATORS

GROUP SIZE: 567 PERCENT OF SAMPLE: 16%
AVERAGE TICF: 55 MONTHS AVERAGE TAFMS: 74 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 67

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F188	RESPOND TO SYSTEM REQUESTS	97
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	96
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	95
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	94
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	92
F155	LABEL MAGNETIC MEDIA EXTERNALLY	91
F190	SET OR RESET COMPUTER TIME CLOCKS	85
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	83
F181	PREPARE PERIPHERAL EQUIPMENT FOR OPERATION	82
E90	CHECK OPERATIONAL STATUS OF EQUIPMENT	81
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	80
F143	ENTER DATA VIA CONSOLE	80
F150	INTERPRET INDICATING LIGHTS ON PERIPHERAL EQUIPMENT	80
F174	PERFORM OPERATOR MAINTENANCE ON COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	78
Q538	ESCORT VISITORS THROUGH FACILITIES	76
E110	MAKE ENTRIES ON SHIFT SUPERVISOR LOGS	76
E101	INITIALIZE PROCESSING, SUCH AS BATCHED JOB, ON-LINE, OR OFF-LINE	75
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	71
F176	PERFORM OR PRACTICE COMMUNICATIONS-COMPUTER SYSTEMS EMERGENCY SYSTEMS	69
F172	PERFORM COMMUNICATIONS-COMPUTER SYSTEM INITIALIZATION PROCEDURES	68

TABLE A3

MAGNETIC MEDIA LIBRARIANS

GROUP SIZE: 75
AVERAGE TICF: 44 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 56

PERCENT OF SAMPLE: 2%
AVERAGE TAFMS: 53 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
K268	FILE MAGNETIC MEDIA	99
K261	CLEAN MAGNETIC MEDIA	95
K270	ISSUE MAGNETIC MEDIA FROM LIBRARY	92
K264	DEGAUSS MAGNETIC MEDIA	92
K269	INVENTORY MAGNETIC MEDIA	92
K259	ACCEPT RETURNED MAGNETIC MEDIA	91
K279	VISUALLY INSPECT MAGNETIC MEDIA	89
F155	LABEL MAGNETIC MEDIA EXTERNALLY	88
K273	PLACE LOAD-POINT OR END-OF-TAPE MARKERS ON MAGNETIC TAPE	85
K278	UPDATE SCRATCH TAPES OR DISK PACK LISTS	83
K271	MAINTAIN OFF-SITE OR REMOTE STORAGE BACKUP FILES	83
K260	CERTIFY MAGNETIC MEDIA	83
K266	ESTABLISH OR UPDATE MAGNETIC MEDIA ACCOUNTABILITY RECORDS	83
K272	MAKE ENTRIES IN MAGNETIC MEDIA CONTROL LOGS	80
E099	IDENTIFY MAGNETIC MEDIA NEEDED FROM OR TO BE RETURNED TO OFF-SITE STORAGE	76
K265	DESTROY MAGNETIC MEDIA	76
K263	COORDINATE MAGNETIC MEDIA REQUIREMENTS, SUCH AS WITH SYSTEM CONSOLE OPERATORS OR SYSTEM MONITORS	72
Q538	ESCORT VISITORS THROUGH FACILITIES	72
E100	IDENTIFY TAPE FAILURES	69
K262	COMPARE INTERNAL AND EXTERNAL LABELS AGAINST RUN SHEETS	69

TABLE A4

SYSTEMS SECURITY PERSONNEL

GROUP SIZE: 12
AVERAGE TICF: 47 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 57

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 83 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	100
Q538	ESCORT VISITORS THROUGH FACILITIES	100
Q548	MARK OR STAMP SENSITIVE UNCLASSIFIED OR CLASSIFIED INFORMATION, OTHER THAN MESSAGES	100
Q562	REPORT SECURITY VIOLATIONS	100
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	92
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSTIVE UNCLASSIFIED MATERIAL	92
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	92
F188	RESPOND TO SYSTEM REQUESTS	92
Q552	PERFORM PHYSICAL SECURITY INSPECTIONS OF FACILITIES	83
Q546	MAINTAIN VISITOR REGISTERS	83
Q537	DISTRIBUTE CLASSIFIED MATERIAL	83
Q529	AUTHORIZE OR DENY ACCESS TO RESTICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	75
Q567	SIGN RECEIPTS FOR CLASSIFIED MATERIALS	67
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	67
F155	LABEL MAGNETIC MEDIA EXTERNALLY	67
F190	SET OR RESET COMPUTER TIME CLOCKS	67
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	58
Q549	PAGE COUNT CLASSIFIED MATERIAL	58
Q533	DESIGNATE CLASSIFIED MATERIAL FOR DESTRUCTION	58
Q541	INSPECT CLASSIFIED MATERIAL	58

TABLE A5

PRODUCTION CONTROL PERSONNEL

GROUP SIZE: 124
AVERAGE TICF: 61 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 65

PERCENT OF SAMPLE: 4%
AVERAGE TAFMS: 78 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	94
G196	ASSEMBLE INPUT OR OUTPUT DATA	85
E101	INITIALIZE PROCESSING, SUCH AS BATCHED JOB, ON-LINE, OR OFF-LINE	82
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	81
E93	COORDINATE WITH SUBSCRIBERS OR CUSTOMERS ON MATTERS SUCH AS OPERATIONAL OR PROCEDURAL PROBLEMS	81
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	81
E116	PROVIDE CUSTOMERS WITH SYSTEM DOCUMENTATION CHANGES	81
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	77
G205	ESTABLISH OR UPDATE COMPUTER RUN PROCESSING INSTRUCTIONS	75
F143	ENTER DATA VIA CONSOLE	75
G212	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS SOFTWARE RELEASE OR PATCH DOCUMENTATION	74
F139	COORDINATE SCHEDULED DOWNTIME WITH MAIN SITE, OFFICE OF PRIMARY RESPONSIBILITY (OPR), AND REMOTE USERS	74
F154	ISOLATE PROBLEMS ON PRODUCTION RUNS	73
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	72
G203	EDIT INPUT OR OUTPUT DATA	72
F193	TRANSFER PROGRAMS OR DATA FROM ONE MEDIA TO ANOTHER MEDIA	70
G208	PREPARE COMMUNICATIONS-COMPUTER SYSTEMS RUN PROCESSING INSTRUCTIONS	69
E119	REVIEW COMPUTER OUTPUT PRODUCTS FOR COMPLIANCE WITH STANDARDS OR SPECIFICATIONS	69
G211	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS RUN PROCESSING INSTRUCTIONS	68
G298	ANSWER SUPERVISORY LIGHTS	67

TABLE A6

COMMUNICATIONS OPERATIONS PERSONNEL

GROUP SIZE: 822
AVERAGE TICF: 53 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 67

PERCENT OF SAMPLE: 24%
AVERAGE TAFMS: 66 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
I240	PREPARE SERVICE MESSAGES	91
I229	FOLLOW UP SERVICE MESSAGES	89
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	88
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	86
I233	MAINTAIN SERVICE MESSAGE LOGS OR FILES	85
I224	ASSIGN ROUTING INDICATORS	83
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	80
E111	NOTIFY ADDRESSEES OR DISTRIBUTION CENTERS OF HIGH PRECEDENCE MESSAGE RECEIPT	77
Q538	ESCORT VISITORS THROUGH FACILITIES	76
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	76
Q537	DISTRIBUTE CLASSIFIED MATERIAL	75
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	73
I235	MAKE ENTRIES ON DD FORMS 1503 (MESSAGE CORRECTION NOTICES)	71
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	69
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	68
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	67
E110	MAKE ENTRIES OF SHIFT SUPERVISOR LOGS	67
E115	PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY, OR DISTRIBUTION	66
I246	SEPARATE INCOMING MESSAGES FOR DISTRIBUTION OR COMMERCIAL REFILE	65
I236	PERFORM ALTERNATE ROUTING OF MESSAGE TRAFFIC	65

TABLE A7

TELECOMMUNICATIONS OPERATORS

GROUP SIZE: 634
AVERAGE TICF: 51 MONTHS
AVERAGE NUMBER TASKS PERFORMED: 68

PERCENT OF SAMPLE: 18%
AVERAGE TAFMS: 63 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
I240	PREPARE SERVICE MESSAGES	91
I229	FOLLOW UP SERVICE MESSAGES	89
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	88
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	86
I233	MAINTAIN SERVICE MESSAGE LOGS OR FILES	85
I224	ASSIGN ROUTING INDICATORS	83
E111	NOTIFY ADDRESSEES OR DISTRIBUTION CENTERS OF HIGH PRECEDENCE MESSAGE RECEIPT	77
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	80
Q537	DISTRIBUTE CLASSIFIED MATERIAL	75
I235	MAKE ENTRIES ON DD FORMS 1503 (MESSAGE CORRECTION NOTICES)	71
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	76
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	69
Q538	ESCORT VISITORS THROUGH FACILITIES	76
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	68
I246	SEPARATE INCOMING MESSAGES FOR DISTRIBUTION OR COMMERCIAL REFILE	65
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	73
E110	MAKE ENTRIES OF SHIFT SUPERVISOR LOGS	67
E115	PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY, OR DISTRIBUTION	66
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	100
I236	PERFORM ALTERNATE ROUTING OF MESSAGE TRAFFIC	65

TABLE A8

SWITCHING CENTER PERSONNEL

GROUP SIZE: 13
AVERAGE TICF: 34 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 40

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 41 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
I240	PREPARE SERVICE MESSAGES	85
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	85
I229	FOLLOW UP SERVICE MESSAGES	85
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	77
F188	RESPOND TO SYSTEM REQUESTS	77
H217	MAKE ENTRIES ON INTERCEPT LOGS	77
I227	DIRECT MESSAGES TO INTERCEPT	77
F173	PERFORM MAGNETIC MEDIA SEARCHES	77
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	69
K269	INVENTORY MAGNETIC MEDIA	69
I237	PREPARE HEADERS AND END OF TRANSMISSION (EOT) CARDS FOR DATA MESSAGES	69
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	69
I224	ASSIGN ROUTING INDICATORS	54
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	54
I233	MAINTAIN SERVICE MESSAGE LOGS OR FILES	54
I239	PREPARE PAPER TAPE MESSAGES	54
I236	PERFORM ALTERNATE ROUTING OF MESSAGE TRAFFIC	54
H220	PLACE SWITCHING CIRCUITS INTO OR OUT OF SERVICE	46
H219	PLACE REMOTE TERMINALS INTO OR OUT OF SERVICE	46
K272	MAKE ENTRIES IN MAGNETIC MEDIA CONTROL LOGS	46

TABLE A9

MOBILITY PERSONNEL

GROUP SIZE: 98 PERCENT OF SAMPLE: 3%
AVERAGE TICF: 60 MONTHS AVERAGE TAFMS: 80 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 65

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
L280	CAMOUFLAGE MOBILE COMMUNICATIONS EQUIPMENT	93
L284	PALLETIZE EQUIPMENT	87
L285	PERFORM GUARD DUTY	86
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	82
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	81
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	79
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	79
I233	MAINTAIN SERVICE MESSAGE LOGS OR FILES	78
L290	PERFORM OPERATOR'S BEFORE, DURING, OR AFTER OPERATION CHECKS OR SERVICES ON VEHICLES	77
I224	ASSIGN ROUTING INDICATORS	76
Q549	PAGE COUNT CLASSIFIED MATERIAL	76
Q538	ESCORT VISITORS THROUGH FACILITIES	76
L282	ERECT TACTICAL AIR BASE CONTONEMENT AREAS	73
L283	MAINTAIN MOBILE ADMINISTRATIVE SUPPORT KITS	73
I240	PREPARE SERVICE MESSAGES	73
I234	MAKE ENTRIES OF AF FORMS 1035 (CHANNEL NUMBER)	72
Q546	MAINTAIN VISITOR REGISTERS	71
L295	SET UP COMMUNICATIONS-COMPUTER SYSTEMS AT SITES	70
L286	PERFORM INITIAL TESTS OF SYSTEMS IN A MOBILE ENVIRONMENT	70
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	70

TABLE A10

TELECOMMUNICATIONS SECURITY PERSONNEL

GROUP SIZE: 12
AVERAGE TICF: 63 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 33

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 71 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	92
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	92
I240	PREPARE SERVICE MESSAGES	92
I229	FOLLOW UP SERVICE MESSAGES	83
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	75
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	75
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	75
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	75
Q538	ESCORT VISITORS THROUGH FACILITIES	75
Q537	DISTRIBUTE CLASSIFIED MATERIAL	67
I233	MAINTAIN SERVICE MESSAGE LOGS OR FILES	67
Q554	PREPARE CLASSIFIED MATERIAL FOR MAIL, DELIVERY, OR DISTRIBUTION	58
H221	POST ROUTING INDICATOR CHANGES	58
I224	ASSIGN ROUTING INDICATORS	58
Q562	REPORT SECURITY VIOLATIONS	58
I235	MAKE ENTRIES ON DD FORMS 1503 (MESSAGE CORRECTION NOTICES)	58
Q546	MAINTAIN VISITOR REGISTERS	50
Q552	PERFORM PHYSICAL SECURITY INSPECTIONS OF FACILITIES	50
Q541	INSPECT CLASSIFIED MATERIAL	42

TABLE A11

TRAFFIC ANALYSES PERSONNEL

GROUP SIZE: 44
AVERAGE TICF: 73 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 62

PERCENT OF SAMPLE: 1%
AVERAGE TAFMS: 91 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
J257	REVIEW MESSAGES FOR PROPER HANDLING	98
J256	REVIEW MESSAGES FOR ACCURACY	98
J258	REVIEW TRAFFIC LOGS OR FILES	93
J250	MAINTAIN GENERAL MESSAGE FILES	91
J252	MAINTAIN MESSAGE OR TRACER ACTION CASE FILES	80
I229	FOLLOW UP SERVICE MESSAGES	77
J248	MAINTAIN ADDRESS INDICATOR GROUP (AIG) FILES	75
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	75
I240	PREPARE SERVICE MESSAGES	75
E93	COORDINATE WITH SUBSCRIBERS OR CUSTOMERS ON MATTERS SUCH AS OPERATIONAL OR PROCEDURAL PROBLEMS	68
E106	MAINTAIN PUBLICATION FILES	68
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	68
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	68
I235	MAKE ENTRIES ON DD FORMS 1503 (MESSAGE CORRECTION NOTICES)	66
E89	ANALYZE OR EVALUATE STATISTICAL DATA	64
H221	POST ROUTING INDICATOR CHANGES	64
J253	MAINTAIN PLAIN LANGUAGE ADDRESS (PLA) TABLES	61
J251	MAINTAIN MESSAGE DISTRIBUTION (MD) TABLES	59

TABLE A12

FUNCTIONAL AREA MANAGERS

GROUP SIZE: 636
AVERAGE TICF: 126 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 78

PERCENT OF SAMPLE: 18%
AVERAGE TAFMS: 163 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
Q538	ESCORT VISITORS THROUGH FACILITIES	74
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	73
A4	DETERMINE WORK PRIORITIES	73
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	72
C56	PREPARE APR	68
A6	DEVELOP WORK METHODS OR PROCEDURES	68
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	67
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	62
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT OR SUPPLIES	61
C46	EVALUATE INSPECTION REPORTS OR PROCEDURES	61
B40	WRITE CORRESPONDENCE	61
C59	WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	61
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	60
A20	SCHEDULE LEAVES OR PASSES	60
Q530	CHANGE LOCK COMBINATIONS OF SAFES, VAULTS, OR CIPHER LOCKS	60
Q562	REPORT SECURITY VIOLATIONS	59
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	59
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	57
A16	PLAN WORK ASSIGNMENTS	56

TABLE A13

COMMUNICATIONS-COMPUTER SUPERVISORS

GROUP SIZE: 344
AVERAGE TICF: 132 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 93

PERCENT OF SAMPLE: 10%
AVERAGE TAFMS: 182 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	96
C56	PREPARE APR	93
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	89
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOR)	88
A4	DETERMINE WORK PRIORITIES	85
C59	WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	85
A20	SCHEDULE LEAVES OR PASSES	84
A9	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	81
A6	DEVELOP WORK METHODS OR PROCEDURES	81
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT OR SUPPLIES	80
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	79
C45	EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION, OR RECLASSIFICATION	77
Q538	ESCORT VISITORS THROUGH FACILITIES	77
A1	ASSIGN PERSONNEL TO DUTY POSITIONS	76
A16	PLAN WORK ASSIGNMENTS	76
C52	EVALUATE WORK SCHEDULES	73
C53	INDORSE AIRMAN PERFORMANCE REPORTS (APR)	72
C46	EVALUATE INSPECTION REPORTS OR PROCEDURES	72
B36	SUPERVISE 5-LEVEL COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR PERSONNEL (AFSC 49151)	72
A2	ASSIGN PERSONNEL TO DUTY POSITIONS	69

TABLE A14

COMSEC ACCOUNTANTS

GROUP SIZE: 166
AVERAGE TICF: 114 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 61

PERCENT OF SAMPLE: 5%
AVERAGE TAFMS: 130 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
Q538	ESCORT VISITORS THROUGH FACILITIES	99
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	96
Q542	INVENTORY CLASSIFIED OR COMMUNICATIONS SECURITY (COMSEC) MATERIALS	96
Q555	PREPARE DESTRUCTION REPORTS FOR CLASSIFIED MATERIALS	94
Q549	PAGE COUNT CLASSIFIED MATERIAL	93
Q545	MAINTAIN COMSEC ACCOUNT RECORDS	92
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	92
Q530	CHANGE LOCK COMBINATIONS OF SAFES, VAULTS, OR CIPHER LOCKS	90
Q567	SIGN RECEIPTS FOR CLASSIFIED MATERIALS	87
Q543	ISSUE COMSEC MATERIALS	85
Q537	DISTRIBUTE CLASSIFIED MATERIAL	85
Q533	DESIGNATE CLASSIFIED MATERIAL FOR DESTRUCTION	84
Q541	INSPECT CLASSIFIED MATERIAL	83
Q562	REPORT SECURITY VIOLATIONS	82
Q551	PERFORM COURIER FUNCTIONS	80
Q538	ESCORT VISITORS THROUGH FACILITIES	80
Q544	MAINTAIN COMSEC ACCOUNT READINESS ACTIONS	77
Q548	MARK OR STAMP SENSITIVE UNCLASSIFIED OR CLASSIFIED INFORMATION, OTHER THAN MESSAGES	74
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED	71

TABLE A15

UNIT SECURITY MANAGERS

GROUP SIZE: 32
AVERAGE TICF: 146 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 37

PERCENT OF SAMPLE: 1%
AVERAGE TAFMS: 179 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
B29	IMPLEMENT SECURITY PROGRAMS	94
A15	PLAN SECURITY PROGRAMS	94
Q531	CONDUCT SECURITY BRIEFINGS OR DEBRIEFINGS	91
Q550	PERFORM ADMINISTRATIVE SECURITY INSPECTIONS	88
C49	EVALUATE SECURITY PROGRAMS	84
Q552	PERFORM PHYSICAL SECURITY INSPECTIONS OF FACILITIES	81
Q562	REPORT SECURITY VIOLATIONS	78
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	72
Q564	REVIEW DOCUMENTS FOR SECURITY VIOLATIONS	72
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFEID MATERIALS	69
A11	PLAN BRIEFINGS	66
Q530	CHANGE LOCK COMBINATIONS OF SAFES, VAULTS, OR CIPHER LOCKS	63
B40	WRITE CORRESPONDENCE	59
Q541	INSPECT CLASSIFIED MATERIAL	56
Q560	PREPARE OR REVISE SECURITY PROCEDURES CHECKLISTS	56
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	53
Q533	DESIGNATE CLASSIFIED MATERIAL FOR DESTRUCTION	53
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	53
Q567	SIGN RECEIPTS FOR CLASSIFIED MATERIALS	53
C46	EVALUATE INSPECTION REPORTS OR PROCEDURES	50
A6	DEVELOP WORK METHODS OR PROCEDURES	44

TABLE A16

CONTRACTING AND BUDGETING PERSONNEL

GROUP SIZE: 17
AVERAGE TICF: 110 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 120

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 136 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
C48	EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	94
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT OR SUPPLIES	94
B25	DIRECT UTILIZATION OF EQUIPMENT	88
C42	EVALUATE BUDGET OR FINANCIAL REQUIREMENTS	82
R575	CONFIRM CONTRACT TERMS, SUCH AS DELIVERY DATE OR QUANTITY	76
R603	RESEARCH STATUS OF PURCHASE ORDERS	76
R598	PREPARE PROCUREMENT DOCUMENTS, SUCH AS REQUISITIONS, INVOICES, OR VOUCHERS	76
R587	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	76
A7	DRAFT BUDGET OR FINANCIAL REQUIREMENTS	76
R578	DISPOSE OF EXCESS OR UNSERVICEABLE TOOLS, SUPPLIES, OR EQUIPMENT	76
R581	ESTABLISH OR UPDATE INVENTORY OR STOCK CONTROL RECORDS	71
R609	VERIFY VALIDITY OF SUPPLY REQUESTS	65
R582	ESTABLISH PROCEDURES FOR EQUIPMENT MAINTENANCE OR OTHER CONTRACTURAL SUPPORT SERVICES	65
R571	ADMINISTER DELIVERY OF OPEN PURCHASE ORDERS	65
R592	MONITOR COMPLIANCE WITH CONTRACTS	59
R599	PREPARE SUPPLY DOCUMENTS, SUCH AS REQUISITIONS, INVOICES, OR VOUCHERS	59

TABLE A17

SWITCHBOARD SUPERVISORS

GROUP SIZE: 14
AVERAGE TICF: 102 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 67

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 149 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
M315	PLACE CALLS BETWEEN SUBSCRIBERS, OTHER THAN SPECIAL HANDLING CALLS	93
M301	COMPILE TELEPHONE DIRECTORIES	93
B36	SUPERVISE 5-LEVEL COMMUNICATIONS-COMPUTER SYSTEMS OPERATOR PERSONNEL (AFSC 49151)	93
M311	MAINTAIN TELEPHONE DIRECTORIES	93
M320	SUPERVISE MINIMIZE CONDITION ACTIONS	93
M302	COORDINATE SWITCHBOARD CIRCUIT OR EQUIPMENT PROBLEMS WITH MAINTENANCE, TECHNICAL CONTROL, OR SUPPORT AGENCIES	86
M297	ACCEPT AND CONNECT CALLS ACCORDING TO THEIR PRECEDENCE	86
B34	SUPERVISE 3-LEVEL COMMUNICATIONS-COMPUTER SYSTEM OPERATOR PERSONNEL (AFSC 49131)	86
D64	CONDUCT OJT	86
D78	EVALUATE OJT TRAINEES	86
M312	MONITOR HIGH PRECEDENCE OR EMERGENCY CALLS	86
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	79
D81	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	79
M322	TEST SWITCHBOARD CIRCUITS	79
M298	ANSWER SUPERVISORY LIGHTS	79
D67	COUNSEL TRAINEES ON TRAINING PROGRESS	79
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	79
M310	MAINTAIN SWITCHBOARD INSTRUCTIONS FOR EMERGENCIES, SUCH AS FIRE, CRASH, OR ATTACK	79
M318	PROCESS TELEPHONE CONFERENCE CALLS	79

TABLE A18

UNIT TRAINING MANAGERS

GROUP SIZE: 21
AVERAGE TICF: 127 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 58

PERCENT OF SAMPLE: 1%
AVERAGE TAFMS: 150 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
D80	EVALUATE TRAINING METHODS OR TECHNIQUES	90
D78	EVALUATE OJT TRAINEES	90
D75	DIRECT OR IMPLEMENT OJT PROGRAMS	90
D69	DETERMINE OJT REQUIREMENTS	86
D64	CONDUCT OJT	86
D82	PLAN OJT	81
D67	COUNSEL TRAINEES ON TRAINING PROGRESS	81
D74	DEVELOP TRAINING AIDS	76
D68	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	76
D72	DEVELOP LESSON PLANS	71
D61	ADMINISTER TESTS	71
C56	PREPARE APR	71
C43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	67
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	67
D81	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	62
D76	DIRECT OR IMPLEMENT TRAINING PROGRAMS, OTHER THAN OJT	62
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	62
C46	EVALUATE INSPECTION REPORTS OR PROCEDURES	57
D85	WRITE TEST QUESTIONS	57
D83	PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	57

TABLE A19

COMPUTER PROGRAMMERS

GROUP SIZE: 635
AVERAGE TICF: 56 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 85

PERCENT OF SAMPLE: 18%
AVERAGE TAFMS: 107 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
0400	DEBUG COMPUTER PROGRAMS	88
0398	COMPILE OR ASSEMBLE PROGRAMS	83
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	82
0404	DESK CHECK PROGRAMS	80
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	78
P523	TEST COMPUTER PROGRAMS	76
0435	MAINTAIN SOURCE CODE LISTINGS	64
0473	REVIEW SOURCE CODE LISTINGS	62
N333	DESIGN INPUT OR OUTPUT FORMATS	59
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	58
0399	COORDINATE WITH USERS ON NEW SYSTEM RELEASES	55
0397	CODE JOB CONTROL RUN STREAMS IN JOB CONTROL LANGUAGES	55
N326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	51
0402	DESIGN ERROR HANDLING ROUTINES	50
0484	WRITE JOB CONTROL RUN STREAMS	48
0483	WRITE FUNCTIONAL APPLICATIONS PROGRAMS	47
N372	PREPARE INPUT OR OUTPUT FILE SPECIFICATIONS	47
0465	REVIEW INPUT OR OUTPUT FORMATS	46
N324	ANALYZE DATA BASE REQUIREMENTS	46
N373	PREPARE OR REVISE PROGRAM SPECIFICATIONS	45

TABLE A20

APPLICATIONS PROGRAMMERS

GROUP SIZE: 303
AVERAGE TICF: 45 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 63

PERCENT OF SAMPLE: 9%
AVERAGE TAFMS: 89 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
0400	DEBUG COMPUTER PROGRAMS	97
0398	COMPILE OR ASSEMBLE PROGRAMS	96
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	94
0404	DESK CHECK PROGRAMS	93
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	91
P523	TEST COMPUTER PROGRAMS	80
0435	MAINTAIN SOURCE CODE LISTINGS	78
0473	REVIEW SOURCE CODE LISTINGS	74
N333	DESIGN INPUT OR OUTPUT FORMATS	71
0402	DESIGN ERROR HANDLING ROUTINES	64
0397	CODE JOB CONTROL RUN STREAMS IN JOB CONTROL LANGUAGES	62
0483	WRITE FUNCTIONAL APPLICATIONS PROGRAMS	59
0399	COORDINATE WITH USERS ON NEW SYSTEM RELEASES	56
0484	WRITE JOB CONTROL RUN STREAMS	54
N331	DESIGN DATA ELEMENTS OR CODES	53
N372	PREPARE INPUT OR OUTPUT FILE SPECIFICATIONS	53
N332	DESIGN FILES BY GROUPING RECORDS	52
0465	REVIEW INPUT OR OUTPUT FORMATS	52
0403	DESIGN RECORDS BY GROUPING DATA ELEMENTS	51
N326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	51

TABLE A21

PROGRAMMER ANALYSTS

GROUP SIZE: 69 PERCENT OF SAMPLE: 2%
AVERAGE TICF: 77 MONTHS AVERAGE TAFMS: 156 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 178

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	97
0400	DEBUG COMPUTER PROGRAMS	96
0404	DESK CHECK PROGRAMS	96
P523	TEST COMPUTER PROGRAMS	94
0398	COMPILE OR ASSEMBLE PROGRAMS	94
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	88
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	86
0467	REVIEW PROGRAM SPECIFICATIONS	83
A4	DETERMINE WORK PRIORITIES	81
0466	REVIEW PROGRAM MAINTENANCE MANUALS	81
N333	DESIGN INPUT OR OUTPUT FORMATS	80
0465	REVIEW INPUT OR OUTPUT FORMATS	80
A6	DEVELOP WORK METHODS OR PROCEDURES	77
0414	DEVELOP INPUTS TO COMMUNICATIONS-COMPUTER SYSTEMS USER MANUALS	75
E93	COORDINATE WITH SUBSCRIBERS OR CUSTOMERS ON MATTERS SUCH AS OPERATIONAL OR PROCEDURAL PROBLEMS	74
D68	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	71
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	68
A9	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	65
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	65
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	64

TABLE A22

DATA BASE ANALYSTS

GROUP SIZE: 11
AVERAGE TICF: 96 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 124
PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 157 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
N324	ANALYZE DATA BASE REQUIREMENTS	100
N377	REVIEW DATA BASE SPECIFICATIONS	100
N330	DESIGN DATA BASE SEPCIFICATIONS	100
0410	DEVELOP DATA BASE RECOVERY PROCEDURES	100
0406	DETERMINE DATA BASE CHARACTERISTICS, SUCH AS SIZE OR STRUCTURE	91
N370	PREPARE CONCEPTUAL DATA BASE DIAGRAMS	91
N344	DETERMINE METHODS OF ACCESSING DATA BASES	91
0396	CODE DATA BASE ACCESS ROUTINES	91
N343	DETERMINE INTERRELATIONSHIPS AMONG FILES, DOCUMENTS, AND DATA ITEMS	91
0412	DEVELOP DATA BASE UPDATE RECOVERY PROCEDURES	91
0326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	91
0480	WRITE DATA BASE RETRIEVAL PROCEDURES	91
0400	DEBUG COMPUTER PROGRAMS	91
0411	DEVELOP DATA BASE RETRIEVAL PROCEDURES	91
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	91
0460	REVIEW DATA BASE RECOVERY PROCEDURES	91
0386	ANLAYZE DATA BASE MANAGEMENT SYSTEM (DBMS) MEMORY OR STORAGE ALLOCATION	82
0437	MODIFY DATA BASE STRUCTURE	82
0462	REVIEW DATA BASE UPDATE PROCEDURES	82
0424	EVALUATE DATA BASE MANAGEMENT SYSTEMS	73

TABLE A23

ASSEMBLY LANGUAGE PROGRAMMERS

GROUP SIZE: 33
AVERAGE TICF: 50 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 64

PERCENT OF SAMPLE: 1%
AVERAGE TAFMS: 110 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
0400	DEBUG COMPUTER PROGRAMS	100
0398	COMPILE OR ASSEMBLE PROGRAMS	97
0393	CODE COMPUTER PROGRAMS IN ASSEMBLY LANGUAGES	91
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	91
E112	PERFORM CALCULATIONS WITHIN A NUMBERING SYSTEM, OTHER THAN DECIMAL, USING ELECTRONIC MEANS	85
E114	PERFORM CHARACTER CONVERSION USING CHARACTER CONVERSION CHARTS, SUCH AS ASCII TO BCD OR ASCII TO EBCDIC	82
0473	REVIEW SOURCE CODE LISTINGS	79
0430	GENERATE PROGRAM DUMPS	76
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	73
F171	PARTICIPATE WITH PROGRAMMERS IN TESTING OR DEBUGGING PROGRAMS	67
0392	CHANGE COMMUNICATIONS-COMPUTER SYSTEMS SOFTWARE BY PATCHING	61
0389	ANALYZE SYSTEM DUMPS	61
F143	ENTER DATA VIA CONSOLE	61
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	61
F152	INTERROGATE MEMORY LOCATION VIA CONSOLES	52

TABLE A24

SECURITY PROGRAMMERS

GROUP SIZE: 10
AVERAGE TICF: 41 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 59

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 106 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
0397	CODE JOB CONTROL RUN STREAMS IN JOB CONTROL LANGUAGES	100
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	100
0400	DEBUG COMPUTER PROGRAMS	100
0398	COMPILE OR ASSEMBLE PROGRAMS	100
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSITIVE UNCLASSIFIED MATERIAL	100
Q533	DESIGNATE CLASSIFIED MATERIAL FOR DESTRUCTION	90
Q570	WITNESS DESTRUCTION OF CLASSIFIED MATERIALS	90
Q567	SIGN RECEIPTS FOR CLASSIFIED MATERIALS	80
Q548	MARK OR STAMP SENSITIVE UNCLASSIFIED OR CLASSIFIED INFORMATION, OTHER THAN MESSAGES	80
0473	REVIEW SOURCE CODE LISTINGS	80
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	70
0404	DESK CHECK PROGRAMS	70
P523	TEST COMPUTER PROGRAMS	70
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	70
0471	REVIEW SOFTWARE PROBLEM REPORTS	60
Q541	INSPECT CLASSIFIED MATERIAL	60
Q527	ASSIGN CONTROL NUMBERS TO CLASSIFIED DOCUMENTS	60
Q553	PLACE DOWNGRADING INSTRUCTIONS ON CLASSIFIED MATERIALS	60
Q530	CHANGE LOCK COMBINATIONS OF SAFES, VAULTS, OR CIPHER LOCKS	60
Q551	PERFORM COURIER FUNCTIONS	50

TABLE A25

COMPUTER OPERATIONS SPECIALIST

GROUP SIZE: 17
AVERAGE TICF: 68 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 315

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 82 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F153	ISOLATE CAUSES OF MACHINE STOPS OR MALFUNCTIONS	100
F154	ISOLATE PROBLEMS ON PRODUCTION RUNS	100
F174	PERFORM OPERATOR MAINTENANCE ON COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	100
F178	POWER UP OR POWER DOWN COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	100
A6	DEVELOP WORK METHODS OR PROCEDURES	100
E90	CHECK OPERATIONAL STATUS OF EQUIPMENT	100
A8	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	100
F151	INTERPRET INDICATING OR REGISTER LIGHTS ON CENTRAL PROCESSING UNITS (CPU) OR MAINFRAMES	100
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	100
F155	LABEL MAGNETIC MEDIA EXTERNALLY	100
F169	NOTIFY AFFECTED PERSONNEL, SUCH AS SUPERVISORS OR REMOTE USERS, OF MACHINE FAILURES OR DOWNTIME	100
F188	RESPOND TO SYSTEM REQUESTS	100
F150	INTERPRET INDICATING LIGHTS ON PERIPHERAL EQUIPMENT	100
F175	PERFORM OPERATOR MAINTENANCE ON TEMPERATURE OR HUMIDITY RECORDING DEVICES	100
F177	PERFORM RECOVERY PROCEDURES ON COMMUNICATIONS-COMPUTER SYSTEMS	100
F176	PERFORM OR PRACTICE COMMUNICATIONS-COMPUTER SYSTEMS EMERGENCY PROCEDURES	100
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	100
E130	WORK WITH USERS IN RESOLVING COMPUTER SOFTWARE MALFUNCTIONS OR PROBLEMS	94
E101	INITIALIZE PROCESSING, SUCH AS BATCHED JOB, ON-LINE, OR OFF-LINE	94
C41	ANALYZE WORKLOAD REQUIREMENTS	94

TABLE A26

SYSTEMS TESTING PERSONNEL

GROUP SIZE: 15
AVERAGE TICF: 82 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 53

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 149 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
P523	TEST COMPUTER PROGRAMS	100
P506	PARTICIPATE IN SOFTWARE ACCEPTANCE TESTS ON COMMUNICATIONS-COMPUTER SYSTEMS	100
P511	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS TEST PLANS	87
P489	ANALYZE COMMUNICATIONS-COMPUTER SYSTEM TEST RESULTS	80
P510	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS INPUT TEST DATA	80
P521	RUN VALIDATION AND VERIFICATION TESTS ON COMMUNICATIONS-COMPUTER SYSTEMS	73
P500	EVALUATE COMMUNICATIONS-COMPUTER SYSTEM TEST PLANS	73
0471	REVIEW SOFTWARE PROBLEM REPORTS	73
P512	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS TEST REPORTS	67
P508	PREPARE COMMUNICATIONS-COMPUTER SYSTEMS INPUT TEST DATA	67
B40	WRITE CORRESPONDENCE	67
P524	TRACK STATUS OF SOFTWARE DISCREPANCIES	60
P516	RUN INTERFACE TYPE TESTS ON COMMUNICATIONS-COMPUTER SYSTEMS	60
P519	RUN SUB-SYSTEMS TESTS ON COMMUNICATIONS-COMPUTER SYSTEMS	60
P520	RUN TOTAL SYSTEMS TESTS ON COMMUNICATIONS-COMPUTER SYSTEMS	53
P509	PREPARE PROGRAM TEST SPECIFICATIONS OR INSTRUCTIONS	53
P518	RUN REGRESSION TESTS ON COMMUNICATIONS-COMPUTER SYSTEMS	53
0443	PREPARE COMMUNICATIONS-COMPUTER SYSTEM TEST ANALYSIS REPORTS	53
0442	PREPARE COMMUNICATIONS-COMPUTER SYSTEM SOFTWARE TEST ANALYSIS REPORTS	53
P493	DETERMINE IMPACT OF COMMUNICATIONS-COMPUTER APPLICATIONS SYSTEMS ERRORS	47

TABLE A27

PROGRAMMING NCOICS

GROUP SIZE: 18
AVERAGE TICF: 61 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 57

PERCENT OF SAMPLE: 1%
AVERAGE TAFMS: 158 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	100
L56	PREPARE APR	94
B37	SUPERVISE 5-LEVEL COMMUNICATIONS-COMPUTER SYSTEMS PROGRAMMER PERSONNEL (AFSC 49152)	89
0398	COMPILE OR ASSEMBLE PROGRAMS	89
0404	DESK CHECK PROGRAMS	89
D64	CONDUCT OJT	89
D67	COUNSEL TRAINEES ON TRAINING PROGRESS	89
0394	CODE COMPUTER PROGRAMS IN HIGH LEVEL COMPILER LANGUAGES	83
0400	DEBUG COMPUTER PROGRAMS	83
P523	TEST COMPUTER PROGRAMS	83
0405	DETERMINE CAUSES OF ABNORMAL PROGRAM HALTS	78
D78	EVALUATE OJT TRAINEES	78
N333	DESIGN INPUT OR OUTPUT FORMATS	72
A20	SCHEDULE LEAVES OR PASSES	72
B32	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	67
N373	PREPARE OR REVISE PROGRAM SPECIFICATIONS	67
A9	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	67
D68	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	67
L43	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	61
A4	DETERMINE WORK PRIORITIES	61

TABLE A28

MESSAGE DISTRIBUTION CENTER PERSONNEL

GROUP SIZE: 22 PERCENT OF SAMPLE: 1%
AVERAGE TICF: 35 MONTHS AVERAGE TAFMS: 51 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 20

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
E111	NOTIFY ADDRESSEES OR DISTRIBUTION CENTERS OF HIGH PRECEDENCE MESSAGE RECEIPT	91
I246	SEPARATE INCOMING MESSAGES FOR DISTRIBUTION OR COMMERCIAL REFILE	82
I247	STAMP MESSAGES WITH SPECIAL HANDLING, PRECEDENCE, OR CLASSIFICATION	82
E94	DISTRIBUTE MESSAGES OR OUTPUT PRODUCTS	77
E115	PREPARE UNCLASSIFIED MEDIA FOR MAIL, DELIVERY, OR DISTRIBUTION	77
E117	RESPOND TO INQUIRIES FROM CUSTOMERS, SUCH AS COMPUTER JOB OR MESSAGE STATUS	68
Q554	PREPARE CLASSIFIED MATERIAL FOR MAIL, DELIVERY, OR DISTRIBUTION	55
Q537	DISTRIBUTE CLASSIFIED MATERIAL	55
I223	ANNOTATE TIME OF TRANSMISSION OR RECEIPT ON MESSAGES	55
F158	LOAD DATA OR MESSAGES INTO OPTICAL CHARACTER READERS (OCR) OR OPTICAL SCAN UNITS	41
Q524	TRACK STATUS OF SOFTWARE DISCREPANCIES	36
I235	MAKE ENTRIES ON DD FORMS 1035 (CHANNEL NUMBER)	36
F159	LOAD MESSAGE OR DATA INTO PAPER TAPE READERS	36
J256	REVIEW MESSAGES FOR ACCURACY	32
Q534	DESTROY OR MAKE DISPOSITION OF CLASSIFIED OR SENSTIVE UNCLASSIFIED MATERIAL	32
J257	REVIEW MESSAGES FOR PROPER HANDLING	32
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	32
Q568	STORE OR SAFEGUARD CLASSIFIED MATERIAL	32
Q538	ESCORT VISITORS THROUGH FACILITIES	32

TABLE A29

TECHNICAL SCHOOL PERSONNEL

GROUP SIZE: 28 PERCENT OF SAMPLE: 2%
AVERAGE TICF: 90 MONTHS AVERAGE TAFMS: 126 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 30

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
D65	CONDUCT RESIDENT COURSE CLASSROOM TRAINING	93
D72	DEVELOP LESSON PLANS	93
D84	SCORE TESTS	89
D61	ADMINISTER TESTS	86
D74	DEVELOP TRAINING AIDS	86
D85	WRITE TEST QUESTIONS	82
D67	COUNSEL TRAINEES ON TRAINING PROGRESS	75
D79	EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS	64
D68	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	61
B22	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	43
D81	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	43
D80	EVALUATE TRAINING METHODS OR TECHNIQUES	39
D66	CONDUCT TRAINING CONFERENCES OR BRIEFINGS	39
F167	MOUNT OR DISMOUNT MAGNETIC MEDIA	35
D73	DEVELOP RESIDENT COURSE OR CAREER DEVELOPMENT COURSE (CDC) CURRICULUM MATERIALS	35
D83	PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	35
F187	REQUEST SYSTEM INFORMATION VIA CONSOLE	32
D70	DETERMINE RESIDENT COURSE TRAINING REQUIREMENTS	32
E113	PERFORM CALCULATIONS WITHIN A NUMBERING SYSTEM, OTHER THEN DECIMAL, USING PENCIL AND PAPER	32
E114	PERFORM CHARACTER CONVERSIONS USING CHARACTER CONVERSION CHARTS, SUCH AS ASCII TO BCD OR ASCII TO EBCDIC	29

TABLE A30

SYSTEMS IMPLEMENTATION PERSONNEL

GROUP SIZE: 17
AVERAGE TICF: 136 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 72

PERCENT OF SAMPLE: LESS THAN 1%
AVERAGE TAFMS: 178 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
E118	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS REQUIREMENT DOCUMENTATION (CSRD)	82
N381	REVIEW RECOMMENDATIONS FOR PROPOSED COMMUNICATIONS-COMPUTER SYSTEMS EQUIPMENT	76
N376	REVIEW COMMUNICATIONS-COMPUTER SYSTEMS INTERFACE OR INTEGRATION REQUIREMENTS	71
A6	DEVELOP WORK METHODS OR PROCEDURES	71
N326	ASSIST FUNCTIONAL USERS IN CONCEPTUALIZING OR DEFINING REQUIREMENTS	65
C60	WRITE STAFFF STUDIES, SURVEYS, OR SPECIAL REPORTS	65
N323	ANALYZE CURRENT COMMUNICATIONS-COMPUTER SYSTEMS PROCESSING CAPABILITIES	65
A11	PLAN BRIEFINGS	65
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	65
0440	PARTICIPATE IN FINAL COMMUNICATIONS-COMPUTER SYSTEMS REVIEWS FOR USER APPROVAL	65
A19	REVIEW COMMUNICATIONS PLANS	59
N379	REVIEW DATA SYSTEMS PROJECT PLANS	59
E122	REVIEW REQUESTS FOR COMMUNICATIONS-COMPUTER SYSTEMS SERVICES	59
C41	ANALYZE WORKLOAD REQUIREMENTS	59
0453	REPORT IMPLEMENTATION STATUS OF NEW COMMUNICATIONS-COMPUTER SYSTEMS TO USING AGENCIES	59
0422	EVALUATE COMMUNICATIONS-COMPUTER SYSTEMS CHANGE REQUESTS	59
P514	REVIEW REQUESTS FOR DEVIATIONS OR WAIVERS FROM STANDARDS OR SPECIFICATIONS	59
N366	PERFORM OR PARTICIPATE IN OPERATIONAL FEASIBILITY STUDIES	59
A4	DETERMINE WORK PRIORITIES	59

TABLE A31

RESOURCE MANAGERS

GROUP SIZE: 18
AVERAGE TICF: 79 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 36

PERCENT OF SAMPLE: 2%
AVERAGE TAFMS: 117 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
R602	REPORT EXCESS OR UNSERVICEABLE TOOLS, SUPPLIES, OR EQUIPMENT	92
R587	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	89
R608	TURN IN EXCESS OR UNSERVICEABLE PARTS, SUPPLIES, OR EQUIPMENT	89
R601	RECEIPT FOR SUPPLIES OR EQUIPMENT	87
R578	DISPOSE OF EXCESS OR UNSERVICEABLE TOOLS, SUPPLIES, OR EQUIPMENT	87
R591	MAINTAIN EQUIPMENT CUSTODIAN ACCOUNTS	79
R581	ESTABLISH OR UPDATE INVENTORY OR STOCK CONTROL RECORDS	79
R603	RESEARCH STATUS OF PURCHASE ORDERS	76
R595	PLACE SUPPLIES OR EQUIPMENT IN STORAGE	76
R580	ESTABLISH OR MAINTAIN FILES OF HAND RECEIPTS	74
R586	INSPECT SUPPLIES OR EQUIPMENT	66
R593	PACK OR UNPACK TOOLS, SUPPLIES, OR EQUIPMENT	66
R589	LOAD OR UNLOAD TOOLS, SUPPLIES, OR EQUIPMENT	63
R575	CONFIRM CONTRACT TERMS, SUCH AS DELIVERY DATE OR QUANTITY	63
R585	FURNISH PURCHASING INFORMATION TO VENDORS OR CUSTOMERS	61
R599	PREPARE SUPPLY DOCUMENTS, SUCH AS REQUISITIONS, INVOICES, OR VOUCHERS	61
B40	WRITE CORRESPONDENCE	58
R598	PREPARE PROCUREMENT DOCUMENTS, SUCH AS REQUISITIONS, INVOICES, OR VOUCHERS	58
R592	MONITOR COMPLIANCE WITH CONTRACTS	55
R588	ISSUE TOOLS, EQUIPMENT, OR SUPPLIES	52

TABLE A32

SWITCHBOARD OPERATORS

GROUP SIZE: 33
AVERAGE TICF: 29 MONTHS
AVERAGE NUMBER OF TASKS PERFORMED: 20

PERCENT OF SAMPLE: 2%
AVERAGE TAFMS: 40 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
M297	ACCEPT AND CONNECT CALLS ACCORDING TO THEIR PRECEDENCE	97
M318	PROCESS TELEPHONE CONFERENCE CALLS	94
M312	MONITOR HIGH PRECEDENCE OR EMERGENCY CALLS	88
M309	MAINTAIN STATUS BOARDS ON LOCATION OF COMMANDERS	82
M302	COORDINATE SWITCHBOARD CIRCUIT OR EQUIPMENT PROBLEMS WITH MAINTENANCE, TECHNICAL CONTROL, OR SUPPORT AGENCIES	76
M298	ANSWER SUPERVISORY LIGHTS	67
M322	TEST SWITCHBOARD CIRCUITS	67
M315	PLACE CALLS BETWEEN SUBSCRIBERS, OTHER THAN SPECIAL HANDLING CALLS	64
Q538	ESCORT VISITORS THROUGH FACILITIES	58
E110	MAKE ENTRIES ON SHIFT SUPERVISOR LOGS	55
M306	MAINTAIN DD FORMS 1194 (TOLL TICKET)	52
M299	BOOK CALLS	52
M320	SUPERVISE MINIMIZE CONDITION ACTIONS	48
M319	REROUTE CALLS IN EVENT OF CIRCUIT FAILURES	48
D64	CONDUCT OJT	48
M317	PLACE SPECIAL HANDLING CALLS	42
E90	CHECK OPERATIONAL STATUS OF EQUIPMENT	39
Q529	AUTHORIZE OR DENY ACCESS TO RESTRICTED OR CONTROLLED AREAS OR CLASSIFIED MATERIALS	36
M303	GIVE CALL PROGRESS INFORMATION	33
M310	MAINTAIN SWITCHBOARD INSTRUCTIONS FOR EMERGENCIES, SUCH AS FIRE, CRASH, OR ATTACK	33

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